



Air-Cooled Series R™ Rotary Liquid Chiller

Model RTAC

140 to 500 Tons (60 Hz)

140 to 400 Tons (50 Hz)

Built For the Industrial and Commercial Markets



Introduction

You...

Like its chillers, Trane wants its relationships with customers to last. Trane is interested in maintaining long term, loyal relationships. This perspective means the point in time that a customer purchases a chiller is the beginning of a relationship, not the end. Your business is important, but your satisfaction is paramount.

Designed by Customers....

Trane's RTAC was designed with the end user's requirements in mind. Reliability, sound, efficiency and physical size were primary design concerns with this latest generation machine. New technologies were applied to literally every major component. The result is an unparalleled engineering achievement in chiller design and manufacturing.

What's New

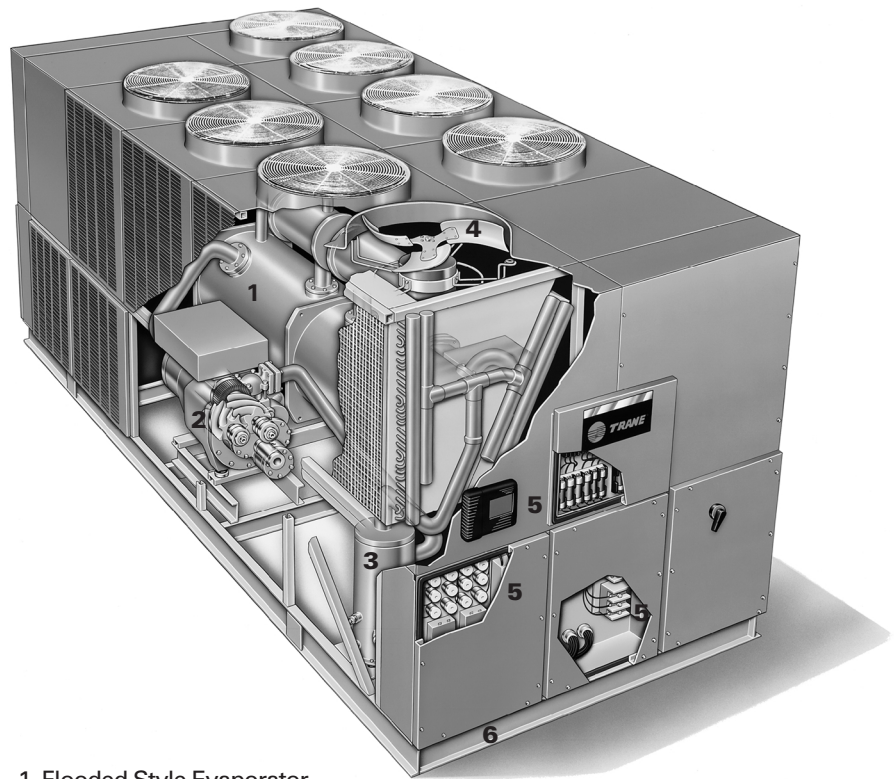
The RTAC offers the same high reliability of Trane's previous air-cooled helical rotary design coupled with lowered sound levels, increased energy efficiency, reduced physical footprint due to its advanced design, low speed/direct drive compressor and proven Series R performance.

Some of the major advantages of the Model RTAC are:

- Over 99% reliable
- Lower sound levels
- Higher energy efficiency
- Smaller physical footprint
- HFC-134a optimized design

The Series R Model RTAC is an industrial grade design built for both the industrial and commercial markets. It is ideal for schools, hospitals, retailers, office buildings, Internet service providers and industrials.

Figure 1 — Cutaway of RTAC Air-Cooled Chiller



1. Flooded Style Evaporator
2. Trane Helical-Rotary Compressor
3. Oil Separator
4. Low Sound Condenser Fans
5. Factory Installed and Tested Unit Controls and Starter
6. Smaller Physical Footprint

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Features and Benefits

RTAC - Exceeding the Efficiency Standard						
60 Hz	Full Load Efficiency (EER*)			Part Load Efficiency (EER*)		
Tonnage	ASHRAE 90.1	Standard Efficiency	High Efficiency	ASHRAE 90.1	Standard Efficiency	High Efficiency
140	9.6	9.7	10.4	10.4	13.2	13.6
155	9.6	9.8	10.4	10.4	13.5	13.9
170	9.6	9.9	10.5	10.4	13.2	13.7
185	9.6	9.7	10.3	10.4	13.1	13.5
200	9.6	9.6	10.1	10.4	12.9	13.3
225	9.6	9.6	10.2	10.4	13.2	13.6
250	9.6	9.6	10.1	10.4	12.8	13.0
275	9.6	9.7	10.4	10.4	13.3	13.8
300	9.6	9.6	10.0	10.4	13.7	13.8
350	9.6	9.6	10.4	10.4	13.2	14.5
400	9.6	9.6	10.0	10.4	13.7	13.9
450	9.6	9.6	n/a	10.4	14.0	n/a
500	9.6	9.6	n/a	10.4	13.9	n/a

*COP = EER/3.414

ASHRAE Standard 90.1 and RTAC World Class Energy Efficiency...

The importance of energy efficiency cannot be understated. Fortunately, ASHRAE has created a guideline emphasizing its importance. Nonetheless, energy is often dismissed as an operational cost over which the owner has little control. That perception results in missed opportunities for energy efficiency, reduced utility bills, and higher profits. Lower utility bills directly affect profitability. Every dollar saved in energy goes directly to the bottom line. Trane's RTAC is one way to maximize your profits.

ASHRAE Standard 90.1 & Executive Order - New technology applied to the design, controls, and manufacturing have created excellent efficiency levels in the RTAC that are helping to push industry minimums to new heights. All Trane air-cooled chillers meet the new efficiency levels mandated by ASHRAE Standard 90.1. This new standard requires higher efficiencies than past technologies can deliver. The US Federal Government has adopted standard 90.1 and, in some cases, requires even higher efficiencies. Federal Executive Order mandates energy consuming devices procured must be in the top 25% of their class or be at least 10% better than any product standard for that product. In the case of chillers, that product standard is

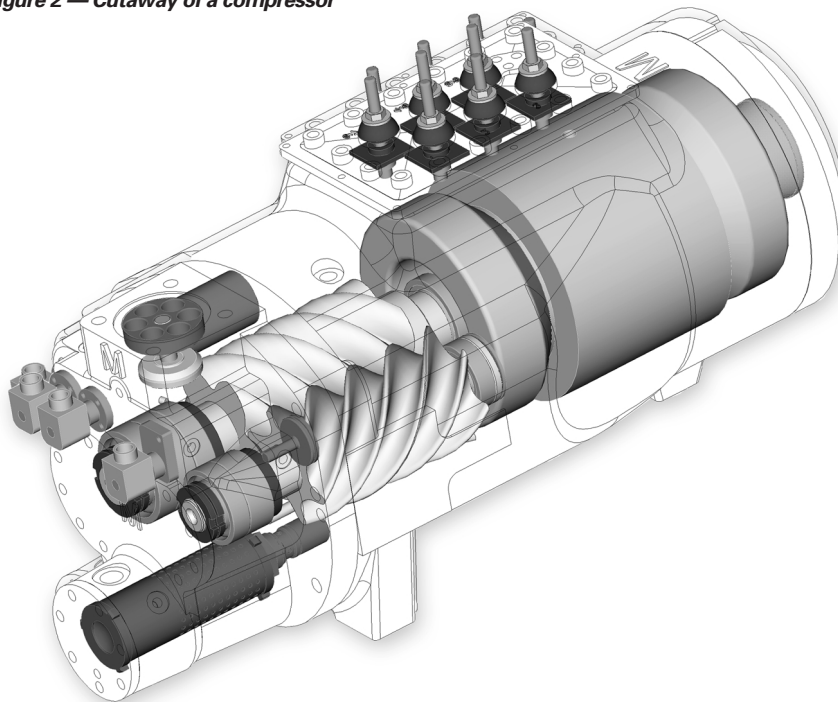
ASHRAE 90.1. Trane's RTAC meets and exceeds the efficiency requirements of 90.1, while the high efficiency RTAC can meet the "stretch goals" of Executive Order.

Risk. The US Federal Government has adopted ASHRAE 90.1, and it's expected to be adopted domestically, if not globally, in the future. Domestic acceptance has already begun. Make sure that your chillers as well as your entire HVAC system complies, or you may be caught retrofitting your project with new equipment and paying extra design dollars if the code is adopted during construction.

Precise Capacity Control. Trane's patented unloading system allows the compressor to modulate infinitely and exactly match building loads. At the same time chilled water temperatures will be maintained within +/- 1/2°F of setpoint. Reciprocating and screw chillers with stepped capacity control do well to maintain chilled water temperatures within 2°F of setpoint. Stepped control also results in overcooling your space because rarely does the capacity of the machine match the building load. The result can be 10% higher energy bills. Trane's RTAC optimizes the part load performance of your machine for energy efficiency, precise control for process applications, and your personal comfort regardless of the weather outside.

Features and Benefits

Figure 2 — Cutaway of a compressor



Excellent Reliability...

A buildings environment is expected to be comfortable. When it is, no one says a word. If it's not... that's a different story. The same is true with chillers. No one ever talks about chillers, yet alone compressors, until they fail, and tenants are uncomfortable and productivity is lost. Trane's helical rotary compressors have a **first year reliability rate of over 99%**, which means our chillers stay running when you need them.

Fewer moving parts. Trane's helical rotary compressors have only two major rotating parts: the male and female rotor. A reciprocating compressor can have more than 15 times that number of critical parts. Multiples of pistons, valves, crankshafts, and connecting rods in a reciprocating unit all represent different failure paths for the compressor. In fact,

reciprocating compressors can easily have a failure rate four times of a helical rotor. Combine that with two to three reciprocating compressors for each helical rotary compressor on chillers of equal tonnage, and statistics tell you it's a matter of time before you lose a reciprocating compressor.

Robust components. Helical rotary compressors are precisely machined using state of the art processes from solid metal bar stock. Tolerances are maintained within a micron or less than a tenth of the diameter of a human hair. The resulting compressor is a robust yet highly sophisticated assembly capable of ingesting liquid refrigerant without risk of damage. Contrast this to a reciprocating compressor, which can be destroyed by a single slug of liquid.

Condenser coils. Trane's condenser coils are manufactured with the same philosophy as the compressors; they're built to last. Even though manufacturing processes have allowed thinner and thinner materials in their assembly, with obvious material and manufacturing savings, Trane's coil material did not change with the RTAC generation of air cooled chillers. Substantial condenser fins, that do not require additional coating in non-corrosive environments, contribute to the highest reliability standards for air-cooled chillers in the industry.



Features and Benefits

Simple Installation

- **Compact Physical Size.** The Trane Model RTAC chiller averages a 20% reduction in physical footprint, while the greatest change is actually 40% smaller when compared against the previous design. This improvement makes the RTAC the smallest air-cooled chiller in the industry and a prime candidate for installations that have space constraints. All physical sizes were changed without sacrificing the side clearances needed to supply fresh airflow without coil starvation.
- **Close Spacing Installation.** The air-cooled Series R™ Chiller has the tightest recommended side clearance in the industry, four feet for maximum performance. In situations where equipment must be installed with less clearance than recommended, which frequently occurs in retrofit applications, restricted airflow is common. Conventional chillers may not work at all. However, the air-cooled Series R chiller with Adaptive Control™ microprocessor will make as much chilled water as possible given the actual installed conditions, stay on line during unforeseen abnormal conditions, and optimize the unit performance. Consult your Trane sales engineer for more details.

- **Factory Testing Means Trouble-Free Start-Up.** All air-cooled Series R chillers are given a complete functional test at the factory. This computer-based test program completely checks the sensors, wiring, electrical components, microprocessor function, communication capability, expansion valve performance and fans. In addition, each compressor is run and tested to verify capacity and efficiency. Where applicable, each unit is factory preset to the customer's design conditions; an example would be leaving liquid temperature setpoint. The result of this test program is that the chiller arrives at the job site fully tested and ready for operation.
- **Factory Installed and Tested Controls/Options Speed Installation.** All Series R chiller options, including main power supply disconnect, low ambient control, ambient temperature sensor, low ambient lockout, communication interface and ice making controls, are factory installed and tested. Some manufacturers send accessories in pieces to be field installed. With Trane, the customer saves on installation expense and has assurance that ALL chiller controls/options have been tested and will function as intended.

Features and Benefits

Superior Control with Tracer™ Chiller Controllers

The Adaptive Control™ microprocessor system enhances the air-cooled Series R chiller by providing the very latest chiller control technology. With the Adaptive Control microprocessor, unnecessary service calls and unhappy tenants are avoided. The unit is designed not to trip or unnecessarily shut down. Only when the Tracer™ chiller controllers have exhausted all possible corrective actions and the unit is still violating an operating limit will the chiller shut down. Controls on other equipment typically shut down the chiller, usually just when it is needed the most.

For example:

A typical five-year-old chiller with dirty coils might trip-out on high pressure cutout on a 100°F (38°C) day in August. A hot day is just when comfort cooling is needed the most. In contrast, the air-cooled Series R chiller with an Adaptive Control microprocessor will stage fans on, modulate electronic expansion valve, and modulate slide valve position as it approaches a high pressure cutout, thereby keeping the chiller on-line when you need it the most.

System Options — Ice Storage

Trane air-cooled Series R Chillers are well suited for ice production. An air-cooled machine typically switches to ice production at night. Two things happen under this assumption. First, the leaving brine temperature from the evaporator is lowered to around 22 to 24°F (-5.5 to -4.4°C). Second, the ambient temperature has typically dropped about 15 to 20°F (8.3 to 11°C) from the peak daytime ambient. This effectively places a lift on the compressors that is similar to daytime running conditions. The chiller can operate in lower ambient at night and successfully produce ice to supplement the next day's cooling demands.

The Model RTAC produces ice by supplying ice storage tanks with a constant supply of glycol solution. Air-cooled chillers selected for these lower leaving fluid temperatures are also

selected for efficient production of chilled fluid at nominal comfort cooling conditions. The ability of Trane chillers to serve "double duty" in ice production and comfort cooling greatly reduces the capital cost of ice storage systems.

When cooling is required, ice chilled glycol is pumped from the ice storage tanks directly to the cooling coils. No expensive heat exchanger is required. The glycol loop is a sealed system, eliminating expensive annual chemical treatment costs. The air-cooled chiller is also available for comfort cooling duty at nominal cooling conditions and efficiencies. The modular concept of glycol ice storage systems and the proven simplicity of Trane Tracer controllers allow the successful blend of reliability and energy saving performance in any ice storage application.

The ice storage system is operated in six different modes: each optimized for the utility cost of the hour.

1. Provide comfort cooling with chiller
2. Provide comfort cooling with ice
3. Provide comfort cooling with ice and chiller
4. Freeze ice storage
5. Freeze ice storage when comfort cooling is required
6. Off

Tracer optimization software controls operation of the required equipment and accessories to easily transition from one mode of operation to another. For example:

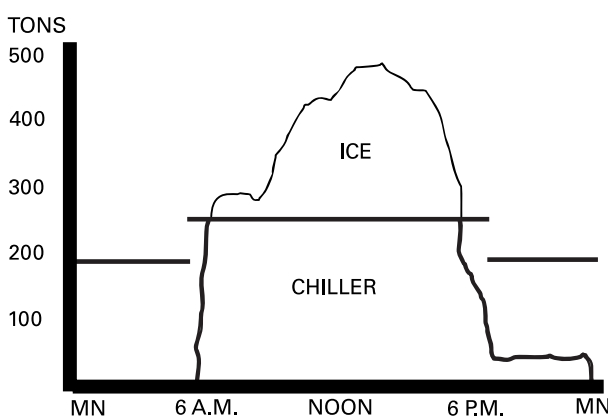
Even with ice storage systems there are numerous hours when ice is neither produced or consumed, but saved. In this mode the chiller is the sole source of cooling. For example, to cool the building after all ice is produced but before high electrical demand charges take effect, Tracer sets the air-cooled chiller leaving fluid setpoint to its most efficient setting and starts the chiller, chiller pump, and load pump.

When electrical demand is high, the ice pump is started and the chiller is either demand limited or shut down completely. Tracer controls have the intelligence to optimally balance the contribution of ice and chiller in meeting the cooling load.

The capacity of the chiller plant is extended by operating the chiller and ice in tandem. Tracer rations the ice, augmenting chiller capacity while reducing cooling costs. When ice is produced, Tracer will lower the air-cooled chiller leaving fluid setpoint and start the chiller, ice and chiller pumps, and other accessories. Any incidental loads that persist while producing ice can be addressed by starting the load pump and drawing spent cooling fluid from the ice storage tanks.

For specific information on ice storage applications, contact your local Trane sales office.

Figure 3 — Ice Storage Demand Cost Savings





Features and Benefits

Options

High Efficiency/Performance Option

This option provides oversized heat exchangers for two purposes. One, it allows the unit to be more energy efficient. Two, the unit will have enhanced operation in high ambient conditions.

Low Temperature Brine

The hardware and software on the unit are factory set to handle low temperature brine applications (less than 40°F/4.4°C).

Ice Making

The unit controls are factory set to handle ice making for thermal storage applications.

Tracer/Summit Communication Interface

Permits bi-directional communication to the Trane Integrated Comfort™ system.

LonTalk Communications Interface LCI-C

Provides the LonMark chiller profile inputs/outputs for use with a generic building automation system.

Remote input options

Permits remote chilled liquid setpoint, remote current limit setpoint, or both by accepting a 4-20 mA or 2-10 Vdc analog signal.

Remote output options

Permits alarm relay outputs, ice making outputs, or both.

Architectural Louvered Panels

Louvered panels cover the complete condensing coil and service area beneath the condenser.

Coil Protection

Louvered panels protect the condenser coils only.

Access Protection

A coated wire mesh that covers the access area under the condenser coils.

Wye-Delta Compressor Start Type

This option provides a reduced inrush starter. Wye-Delta starters are standard on 200-230 volt machines.

Condenser Corrosion Protection

Copper fins and CompleteCoat are available on all size units for corrosion protection. Job site conditions should be matched with the appropriate condenser fin materials to inhibit coil corrosion and ensure extended equipment life. The CompleteCoat option provides fully assembled coils with a flexible dip and bake epoxy coating.

TEAO Condenser Fan Motors

Totally enclosed air-over (TEAO) motors completely seal the motor windings to prevent exposure to ambient conditions.

Low Ambient Option

The low ambient option provides special control logic and variable frequency drives on the condenser fan circuits to permit low temperature start-up and operation down to 0°F (-18°C).

Single/Dual Incoming Power Line Connection

Single or dual points of termination are available for incoming power line connections*. Units with 3-4 compressors must order circuit breakers with the single point connection option. *Some restrictions may apply.

Convenience Outlet

Provides a 15 amp, 115 volt (60 Hz) convenience outlet on the unit.

Remote Evaporator

The remote evaporator option is available on the RTAC 140-250 ton units. This option provides a pre-engineered method of installing the evaporator and all related components indoors. Remote evaporator installations allow the water loop to remain indoors to prevent freezing, thus eliminating the addition of glycol to the system and the resulting performance degradation.

High Ambient Option

The high ambient option consists of special control logic to permit high ambient (up to 125°F/51°C) operation. This option offers the best performance when coupled with the high efficiency performance option.

Non-Fused Power Disconnect Switch

The non-fused molded case disconnect switch (UL approved) is used to disconnect the chiller from main power and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

Circuit Breaker

A HACR rated molded case capacity circuit breaker (UL approved) is available. The circuit breaker can also be used to disconnect the chiller from main power with a through-the-door handle and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

Neoprene Isolators

Isolators provide isolation between chiller and structure to help eliminate vibration transmission. Neoprene isolators are more effective and recommended over spring isolators.

Flange Kit

Provides a raised-face flange kit that converts the grooved pipe evaporator water connections to flange connectors.

Application Considerations

Important

Certain application constraints should be considered when sizing, selecting and installing Trane air-cooled Series R chillers. Unit and system reliability is often dependent upon proper and complete compliance with these considerations. When the application varies from the guidelines presented, it should be reviewed with your local Trane sales engineer.

Unit Sizing

Unit capacities are listed in the performance data section. Intentionally over-sizing a unit to assure adequate capacity is not recommended. Erratic system operation and excessive compressor cycling are often a direct result of an oversized chiller. In addition, an oversized unit is usually more expensive to purchase, install, and operate. If over-sizing is desired, consider using multiple units.

Water Treatment

Dirt, scale, products of corrosion and other foreign material will adversely affect heat transfer between the water and system components. Foreign matter in the chilled water system can also increase pressure drop and consequently, reduce water flow. Proper water treatment must be determined locally, depending on the type of system and local water characteristics. Neither salt nor brackish water is recommended for use in Trane air-cooled Series R chillers. Use of either will lead to a shortened life to an indeterminable degree. The Trane Company encourages

the employment of a reputable water treatment specialist, familiar with local water conditions, to assist in this determination and in the establishment of a proper water treatment program.

Effect Of Altitude On Capacity

Air-cooled Series R chiller capacities given in the performance data tables are for use at sea level. At elevations substantially above sea level, the decreased air density will reduce condenser capacity and, therefore, unit capacity and efficiency.

Ambient Limitations

Trane air-cooled Series R chillers are designed for year-round operation over a range of ambient temperatures. The Model RTAC chiller will operate as standard in ambient temperatures of 25 to 115°F/-4 to 46°C. With the low ambient option, these units will operate down to 0°F/-18°C. If an ambient temperature as high as 125°F/51°C is the basis for design, the high ambient option will permit the chiller to run without going into a limiting condition. For installations in areas with large ambient differences, the wide ambient option will allow the chiller to perform uninhibited from 0 to 125°F/-18 to 51°C. For operation outside these ranges, contact the local Trane sales office.

Water Flow Limits

The minimum and maximum water flow rates are given in Tables G-1 and G-2. Evaporator flow rates below the tabulated values will result in laminar flow causing freeze-up problems, scaling, stratification and poor control. Flow rates exceeding those listed may result in excessive tube erosion.

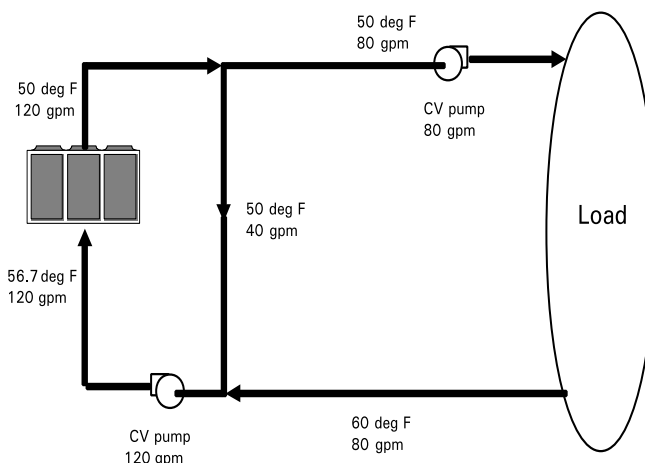
Flow Rates out of Range

Many process cooling jobs require flow rates that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A plastic injection molding process requires 80 gpm [5.1 l/s] of 50°F [10°C] water and returns that water at 60°F [15.6°C]. The selected chiller can operate at these temperatures, but has a minimum flow rate of 120 gpm [7.6 l/s]. The system layout in Figure 4 can satisfy the process.

Flow Control

Trane requires the chilled water flow control in conjunction with the Air-Cooled Series R Chiller to be done by the chiller. This will allow the chiller to protect itself in potentially harmful conditions.

Figure 4 — GPM Out of Range System Layout



Application Considerations

Leaving Water Temperature Limits

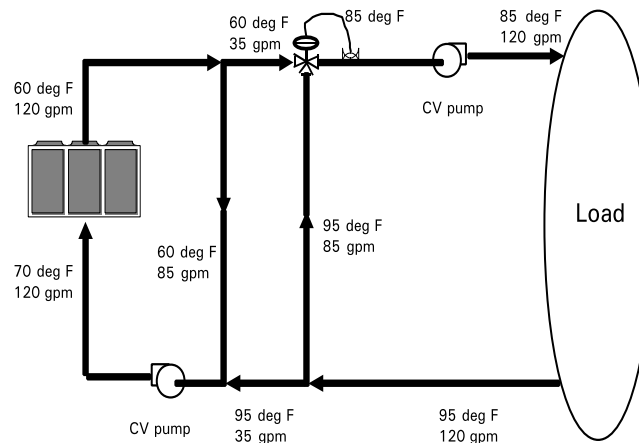
Trane air-cooled Series R chillers have three distinct leaving water categories: standard, low temperature, and ice making. The standard leaving solution temperature range is 40 to 60°F/4.4 to 15.6°C. Low temperature machines produce leaving liquid temperatures less than 40°F/4.4°C. Since liquid supply temperature setpoints less than 40°F/4.4°C result in suction temperatures at or below the freezing point of water, a glycol solution is required for all low temperature machines. Ice making machines have a leaving liquid temperature range of 20 to 60°F/-6.7 to 15.6°C. Ice making controls include dual setpoint controls and safeties for ice making and standard cooling capabilities. Consult your local Trane sales engineer for applications or selections involving low temperature or ice making machines. The maximum water temperature that can be circulated through an evaporator when the unit is not operating is 108°F/42°C.

Leaving Water Temperature out of Range

Many process cooling jobs require temperature ranges that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A laboratory load requires 120 gpm [7.6 l/s] of water entering the process at 85°F [29.4°C] and returning at 95°F [35°C]. The accuracy required is better than the cooling tower can give. The selected chiller has adequate capacity, but a maximum leaving chilled water temperature of 60°F [15.6°C].

In Figure 5, both the chiller and process flow rates are equal. This is not necessary. For example, if the chiller had a higher flow rate, there would simply be more water bypassing and mixing with warm water.

Figure 5 — Temperature Out of Range System Layout



Supply Water Temperature Drop

The performance data for the Trane air-cooled Series R chiller is based on a chilled water temperature drop of 10°F/5.6°C. Chilled water temperature drops from 6 to 18°F/3.3 to 10°C may be used as long as minimum and maximum water temperatures and flow rates are not violated. Temperature drops outside this range are beyond the optimum range for control and may adversely affect the microcomputer's ability to maintain an acceptable supply water temperature range. Further, temperature drops of less than 6°F/3.3°C may result in inadequate refrigerant superheat. Sufficient superheat is always a primary concern in any refrigerant system and is especially important in a package chiller where the evaporator is closely coupled to the compressor. When temperature drops are less than 6°F/3.3°C, an evaporator runaround loop may be required.

Variable Flow in the Evaporator

An attractive chilled water system option may be a variable primary flow (VPF) system. VPF systems present building owners with several cost-saving benefits that are directly related to the pumps. The most obvious cost savings result from eliminating the secondary distribution pump, which in turn avoids the expense incurred with the associated piping connections (material, labor), electrical service, and variable-frequency drive. Building owners often cite pump-related energy savings as the reason that prompted them to install a VPF system. With the help of a software analysis tool such as System Analyzer™, TRACE™, or DOE-2, you can determine whether the anticipated energy savings justify the use of variable primary flow in a particular application. It may also be easier to apply variable primary flow in an existing chilled-water plant. Unlike the "decoupled" system design, the bypass can be positioned at various points in the chilled-water loop and an additional pump is unnecessary. The evaporator on the Model RTAC can withstand up to 50 percent water flow reduction as long as this flow is equal to or above the minimum flow rate requirements. The microprocessor and capacity control algorithms are designed to handle a maximum of 10% change in water flow rate per minute in order to maintain ± 0.5°F leaving evaporator temperature control.

Application Considerations

Ice Storage Provides Reduced Electrical Demand

An ice storage system uses a standard chiller to make ice at night when utilities charge less for electricity. The ice supplements or even replaces mechanical cooling during the day when utility rates are at their highest. This reduced need for cooling results in big utility cost savings.

Another advantage of ice storage is standby cooling capacity. If the chiller is unable to operate, one or two days of ice may still be available to provide cooling. In that time the chiller can be running again before building occupants feel any loss of comfort.

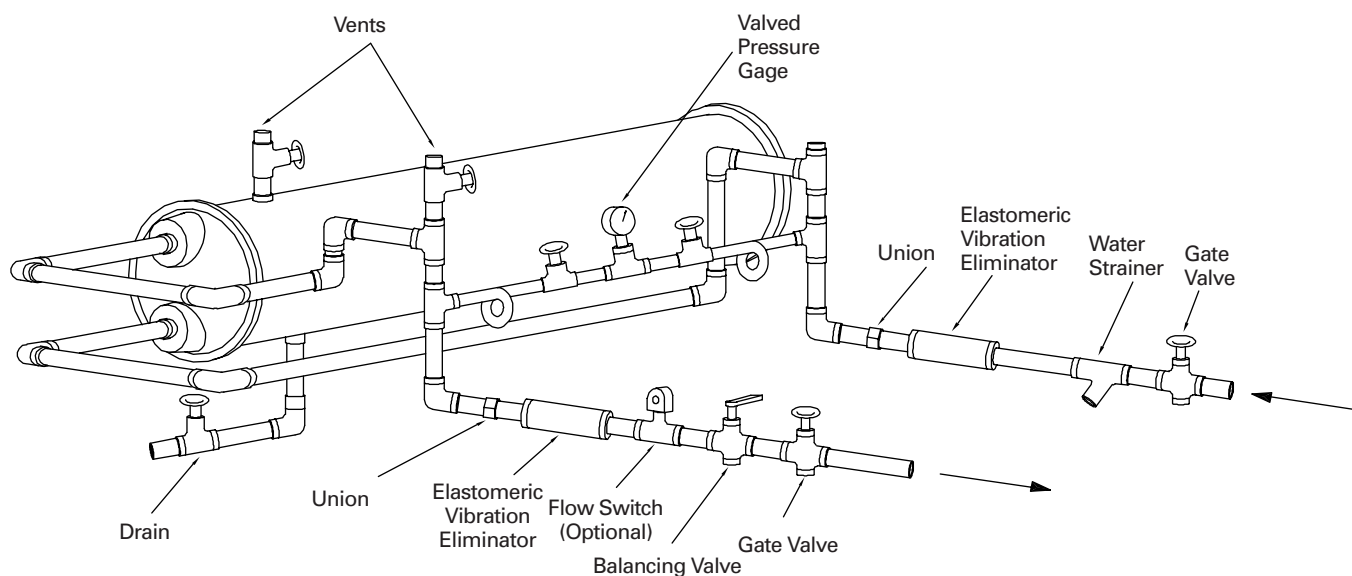
The Trane Model RTAC chiller is uniquely suited to low temperature applications like ice storage because of the ambient relief experienced at night. This allows the Model RTAC chiller to produce ice efficiently, with less stress on the machine.

Simple and smart control strategies are another advantage the Model RTAC chiller offers for ice storage applications. Trane Tracer™ building management systems can actually anticipate how much ice needs to be made at night and operate the system accordingly. The controls are integrated right into the chiller. Two wires and preprogrammed software dramatically reduce field installation cost and complex programming.

Typical Water Piping

All building water piping must be flushed prior to making the final connections to the chiller. To reduce heat loss and prevent condensation, insulation should be installed. Expansion tanks are also usually required so that chilled water volume changes can be accommodated. A typical piping arrangement is shown in Figure 6.

Figure 6 — Water Piping Recommendations



Application Considerations

Short Water Loops

The proper location of the temperature control sensor is in the supply (outlet) water connection or pipe. This location allows the building to act as a buffer and assures a slowly changing return water temperature. If there is not a sufficient volume of water in the system to provide an adequate buffer, temperature control can be lost, resulting in erratic system operation and excessive compressor cycling. A short water loop has the same effect as attempting to control from the building return water. Typically, a two-minute water loop is sufficient to prevent problems. Therefore, as a guideline, ensure the volume of water in the evaporator loop equals or exceeds two times the evaporator flow rate. For a rapidly changing load profile, the amount of volume should be increased. To prevent the effect of a short water loop, the following items should be given careful consideration: A storage tank or larger header pipe to increase the volume of water in the system and, therefore, reduce the rate of change of the return water temperature.

Applications Types

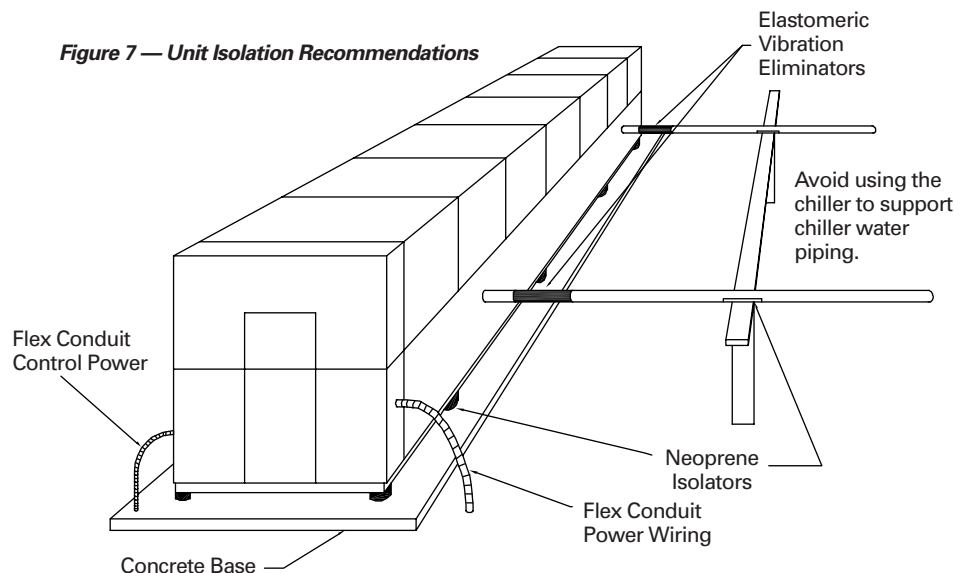
- Comfort cooling.
- Industrial process cooling.
- Ice/thermal storage.
- Low temperature process cooling.

Typical Unit Installation

Outdoor HVAC equipment must be located to minimize noise and vibration transmission to the occupied spaces of the building structure it serves. If the equipment must be located in close proximity to a building, it could be placed next to an unoccupied space such as a storage room, mechanical room, etc. It is not recommended to locate the equipment near occupied, sound sensitive areas of the building or near windows. Locating the equipment away from structures will also prevent sound reflection, which can increase levels at property lines, or other sensitive points.

When physically isolating the unit from structures, it is a good idea to not use rigid supports, and to eliminate any metal-to-metal or hard material contact, when possible. This includes replacing spring or metal weave isolation with elastomeric isolators. Figure 7 illustrates isolation recommendations for the RTAC.

Figure 7 — Unit Isolation Recommendations



Selection Procedure

The chiller capacity tables cover the most frequently encountered leaving liquid temperatures. The tables reflect a 10°F/5.6°C temperature drop through the evaporator. For other temperature drops, apply the appropriate Performance Data Adjustment Factors from Table A-1. For chilled brine selections, contact your local Trane sales engineer. To select a Trane air-cooled Series R™ chiller, the following information is required:

- 1**
Design load in tons of refrigeration
- 2**
Design chilled water temperature drop
- 3**
Design leaving chilled water temperature
- 4**
Design ambient temperature

Evaporator flow rates can be determined by using the following formulas:

$$\text{GPM} = (\text{Tons} \times 24) / \text{Temperature Drop (Degrees F)}$$

OR

$$\text{L/S} = (\text{kW (Capacity)} \times .239) / \text{Temperature Drop (Degrees C)}$$

NOTE: Flow rates must fall within the limits specified in Tables G-1 and G-2 (for GPM or for l/s).

Selection Example

Given:

Required System Load = 140 Tons
 Leaving Chilled Water Temperature (LCWT) = 44°F Chilled Water
 Temperature Drop = 10°F Design
 Ambient Temperature = 95°F
 Evaporator Fouling Factor = 0.0001

1

To calculate the required chilled water flow rate we use the formula given below:

$$\text{GPM} = (140 \text{ Tons} \times 24) / 10^\circ\text{F} = 336 \text{ GPM}$$

2

From Table P-1 (RTAC performance data), an RTAC 140 standard at the given conditions will produce 140.8 tons with compressor power input of 158.5 kW and a unit EER of 9.7.

3

To determine the evaporator pressure drop use the flow rate (GPM) and pressure drop chart on page 16. Entering the curve at 336 gpm, the pressure drop for a nominal 140 standard evaporator is 16 feet.

Minimum Leaving Chilled Water Temperature Setpoint

The minimum leaving chilled water temperature setpoint for water is 40°F. For those applications requiring lower setpoints, a glycol solution must be used. Contact the local Trane sales engineer for additional information.



Model Number Description

RT A C 350 A U CO N N A F N N 1 N X 1 T E N N N 0 N N 1 0 N N
1,2 3 4 5,6,7 8 9 10,11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

1140-500 Tons

Digits 1, 2 — Unit Model

RT Rotary Chiller

Digit 3 — Unit Type

A Air Cooled

Digit 4 — Development Sequence

C Third Sequence

Digit 5, 6 & 7 — Nominal Capacity

140 140 Nominal Tons
155 155 Nominal Tons
170 170 Nominal Tons
185 185 Nominal Tons
200 200 Nominal Tons
225 225 Nominal Tons
250 250 Nominal Tons
275 275 Nominal Tons
300 300 Nominal Tons
350 350 Nominal Tons
375 375 Nominal Tons
400 400 Nominal Tons
450 450 Nominal Tons
500 500 Nominal Tons

Digit 8 — Unit Voltage

A 200/60/3
C 230/60/3
J 380/60/3
D 400/50/3
4 460/60/3
5 575/60/3

Digit 9 — Manufacturing Location

U Water Chiller Business Unit,
Pueblo, CO USA

Digit 10, 11 — Design Sequence

CO Factory Input

Digit 12 — Unit Basic Configuration

N Standard efficiency/performance
configuration
H High efficiency/performance
configuration

Digit 13 — Agency Listing

N No agency listing
U UL/CUL listing

Digit 14 — Pressure vessel code

A ASME pressure vessel code

Digit 15 — Evaporator temp range

F Standard 40-60 deg F leaving temp
G Low (<40 deg F) leaving temperature

Digit 16 — Evaporator configuration

N Standard pass arrangement,
insulated

Digit 17 — Condenser ambient range

N Standard ambient range
(25-115 deg F)
H High ambient capability
(25-125 deg F)
L Low ambient capability (0-115 deg F)
W Wide ambient capability
(0-125 deg F)

Digit 18 — Condenser Fin material

1 Standard aluminum slit fins
2 Copper Fins
4 CompleteCoat epoxy coated fins

Digit 19 — Condenser fan/motor configuration

N STD fans with ODP motors
T STD fans with TEAO motors
W Low Noise Fans

Digit 20 — Compressor motor starter type

X Across-the-line starters
Y Wye-delta closed transition starter

Digit 21 — Incoming Power line connection

1 Single Point Power connection
2 Dual Point Power connection

Digit 22 — Power line connection type

T Terminal block connection for
incoming line(s)
D Non-fused disconnect switch(es)
for incoming line(s)
C HACR rated circuit breaker(s) for
incoming line(s)

Digit 23 — Unit operator interface

E EasyView operator interface
D DynaView operator interface

Digit 24 — Remote operator interface

N No remote interface
C Tracer Comm 3 interface
L LonTalk compatible LCI-C interface

Digit 25 — Control input accessories/ options

N No remote inputs
R Ext. evaporator leaving water
setpoint
C Ext. current limit setpoint
B Ext. leaving water and current
limit setpoint

Digit 26 — Control output accessories/ options

N No output options
A Alarm relay outputs
C Icemaking I/O
D Alarm relay outputs and Icemaking
I/O

Digit 27 — Electrical protection options

0 No short circuit rating
5 10,000 Amp short circuit rating
4 35,000 Amp short circuit rating
6 65,000 Amp short circuit rating

Digit 28 — Electrical accessories

N No electrical accessories
F Nema-4 flow switch – 150 psi
(sealed)
E Nema-1 flow switch – 150 psi

Digit 29 — Control panel accessories

N No convenience outlet
A 15A 115V convenience outlet (60Hz)

Digit 30 — Service Valves

1 With suction service valves

Digit 31 — Compressor Sound Enhancement Option

0 No Compressor Sound Attenuator
1 Compressor Sound Enhancement
Package

Digit 32 — Appearance Options

N No appearance options
A Architectural louvered panels
C Half louvers
G Access guards
B Access guards and half louvers

Digit 33 — Installation accessories

N No installation accessories
R Neoprene in shear unit isolators
F Flange kit for water connections
G Neoprene isolators and Flange kit

General Data

Table G-1 — General Data — 140-500 Ton 60 Hz Units - Standard Efficiency

Size	140	155	170	185	200	225	250	275	300	350	400	450	500
Type	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD
Compressor													
Quantity (1)	2	2	2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons)	70/70	85/70	85/85	100/85	100/100	120/100	120/120	85-85 / 100	100-100 / 100	120-120 / 100	100-100 / 100-100	120-120 / 100-100	120-120 / 120-120
Evaporator													
Water Storage	(Gallons)	35	38	40	42	44	47	50	60	66	71	81	93
	(Liters)	132	141	151	156	163	176	188	227	249	267	304	350
Min. Flow	(GPM)	170	182	198	215	215	237	259	275	308	342	457	545
	(L/Sec)	11	11	13	14	14	15	16	17	20	22	29	34
Max. Flow	(GPM)	525	606	687	626	767	848	929	908	1070	1192	1656	1979
	(L/Sec)	33	38	43	39	48	54	59	57	68	75	105	125
Condenser													
Qty of Coils		4	4	4	4	4	4	4	8	8	8	8	8
Coil Length	(inches)	156/156	180/156	180/180	216/180	216/216	252/216	252/252	180/108	216/108	252/108	216/216	252/216
	(mm)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	4572/2743	5486/2743	6401/4572	5486/5486	6401/5486
Coil Height	(inches)	42	42	42	42	42	42	42	42	42	42	42	42
	(mm)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192	192
Number of Rows		3	3	3	3	3	3	3	3	3	3	3	3
Condenser Fans													
Quantity (1)		4/4	5/4	5/5	6/5	6/6	7/6	7/7	10/6	12/6	14/6	12/12	14/12
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30	30
	(mm)	762	762	762	762	762	762	762	762	762	762	762	762
Total Airflow	(cfm)	77000	84542	92087	101296	110506	119725	128946	147340	165766	184151	221016	239456
	(m ³ /hr)	130811	143623	156441	172086	187732	203394	219059	250307	281610	312843	375471	406797
Nominal fan speed	rpm	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
	rps	19	19	19	19	19	19	19	19	19	19	19	19
Tip Speed	(ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
	M/S	45	45	45	45	45	45	45	45	45	45	45	45
Motor Nominal (Ea)	HP	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	kW	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Min Starting/Oper Ambient (2)													
Std Unit	(Deg F)	25	25	25	25	25	25	25	25	25	25	25	25
	(Deg C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low Ambient	(Deg F)	0	0	0	0	0	0	0	0	0	0	0	0
	(Deg C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General Unit													
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of Independent													
Refrigerant Circuits		2	2	2	2	2	2	2	2	2	2	2	2
% Min. Load		15	15	15	15	15	15	15	15	15	15	15	15
Refrigerant Charge (1)	(lb)	145/145	155/145	155/155	220/210	220/220	230/220	230/230	335/195	385/195	430/215	385/385	430/385
	(kg)	66/66	70/66	70/70	100/95	100/100	104/100	104/104	152/88	175/88	195/97	175/175	195/175
Oil Charge (1)	(lb)	14.4/14.4	15.3/14.4	15.3/15.3	21.8/20.8	21.8/21.8	22.8/21.8	22.8/22.8	33.7/20.3	39.1/20.3	42.6/24.3	39.1/39.1	42.6/39.1
	(kg)	54.5/54.5	57.9/54.5	57.9/57.9	82.5/78.7	82.5/82.5	86.3/82.5	86.3/86.3	127.6/76.8	148/76.8	161.2/92	148/148	161.2/148

Notes:

1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

General Data

Table G-1 —General Data — 140-400 Ton 60 Hz Units - High Efficiency

Size		140	155	170	185	200	225	250	275	300	350	400
Type		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Compressor												
Quantity (1)		2	2	2	2	2	2	2	3	3	4	4
Nominal Size (tons)		70/70	85/70	85/85	100/85	100/100	120/100	120/120	85-85/100	100-100 / 100	85-85 / 85-85	100-100 / 100-100
Evaporator												
Water Storage	(Gallons)	40	42	43	47	50	50	50	71	71	81	93
	(Liters)	151	156	163	176	188	188	188	267	267	304	351
Min. Flow	(GPM)	198	215	215	237	259	259	259	342	342	457	545
	(L/Sec)	13	14	14	15	16	16	16	22	22	29	34
Max. Flow	(GPM)	687	626	767	848	929	929	929	1192	1192	1656	1979
	(L/Sec)	43	39	48	54	59	59	59	75	75	105	125
Condenser												
Qty of Coils		4	4	4	4	4	8	8	8	8	8	8
Coil Length	(inches)	180/180	216/180	216/216	252/216	252/252	144/144	180/108	216/144	252/144	216/216	252/252
	(mm)	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	3658/3658	4572/2743	5486/3658	6401/3658	5486/5486	6401/6401
Coil Height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(mm)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of Rows		3	3	3	3	3	3	3	3	3	3	3
Condenser Fans												
Quantity (1)		5/5	6/5	6/6	7/6	7/7	8/6	8/8	12/6	14/6	12/12	14/14
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(mm)	762	762	762	762	762	762	762	762	762	762	762
Total Airflow	(cfm)	91993	101190	110387	119598	128812	136958	147242	173733	192098	220778	257626
	(m ³ /hr)	156281	171906	187530	203178	218831	232670	250141	295145	326344	375066	437665
Nominal fan speed	rpm	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
	rps	19	19	19	19	19	19	19	19	19	19	19
Tip Speed	(ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
	M/S	45	45	45	45	45	45	45	45	45	45	45
Motor Nominal (Ea)	HP	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	kW	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Min Starting/Oper Ambient (2)												
Std Unit	(Deg F)	25	25	25	25	25	25	25	25	25	25	25
	(Deg C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low Ambient	(Deg F)	0	0	0	0	0	0	0	0	0	0	0
	(Deg C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General Unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of Independent												
Refrigerant Circuits		2	2	2	2	2	2	2	2	2	2	2
% Min. Load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant Charge (1)	(lb)	155/155	220/210	220/220	230/220	230/230	240/240	240/240	385/215	430/215	385/385	430/430
	(kg)	70/70	100/95	100/100	104/100	104/104	109/109	109/109	175/97	195/97	175/175	195/195
Oil Charge (1)	(lb)	15.3/15.3	21.8/20.8	21.8/21.8	22.8/21.8	22.8/22.8	24.8/24.8	24.8/24.8	39.1/24.3	42.6/24.3	39.1/39.1	42.6/42.6
	(kg)	57.9/57.9	82.5/78.7	82.5/82.5	86.3/82.5	86.3/86.3	93.9/93.9	93.9/93.9	148/92	161.2/92	148/148	161.2/161.2

Notes:

1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

General Data

Table G-2 — General Data — 140-400 Ton 50 Hz Units-Standard Efficiency

Size		140	155	170	185	200	250	275	300	350	375	400
Type		STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD
Compressor												
Quantity (1)		2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons)		70/70	85/70	85/85	100/85	100/100	70-70 / 100	85-85 / 100	100-100 / 1100	85-85 / 85-85	100-100 / 85-85	100-100 / 100-100
Evaporator												
Water Storage	(Gallons)	35	38	40	42	44	54	60	66	71	73	81
	(Liters)	132	141	151	156	163	205	227	249	265	276	304
Min. Flow	(GPM)	171	182	198	215	215	242	275	308	457	501	545
	(L/Sec)	11	11	13	14	14	15	17	20	29	32	34
Max. Flow	(GPM)	525	606	684	626	767	747	909	1070	1313	1454	1656
	(L/Sec)	33	38	43	39	48	47	57	68	83	92	105
Condenser												
Qty of Coils		4	4	4	4	4	8	8	8	8	8	8
Coil Length	(inches)	156/156	180/156	180/180	216/180	216/216	156/108	180/108	216/108	180/180	216/180	252/216
	(mm)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	3962/4572	4572/2743	5486/2743	4572/4572	5486/4572	6401/5486
Coil Height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(mm)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of Rows		3	3	3	3	3	3	3	3	3	3	3
Condenser Fans												
Quantity (1)		4/4	5/4	5/5	6/5	6/6	8/6	10/6	12/6	10/10	12/10	12/12
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(mm)	762	762	762	762	762	762	762	762	762	762	762
Total Airflow	(cfm)	63346	69507	75671	83236	90803	108698	121056	136210	151332	166467	181611
	(m ³ /hr)	107615	118081	128553	141405	154260	184661	205655	231399	257089	282801	308528
Nominal fan speed	rpm	950	950	950	950	950	950	950	950	950	950	950
	rps	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
Tip Speed	(ft/min)	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461
	M/S	38	38	38	38	38	38	38	38	38	38	38
Motor Nominal (Ea)	HP	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	kW	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Min Starting/Oper Ambient (2)												
Std Unit	(Deg F)	25	25	25	25	25	25	25	25	25	25	25
	(Deg C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low Ambient	(Deg F)	0	0	0	0	0	0	0	0	0	0	0
	(Deg C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General Unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of Independent												
Refrigerant Circuits		2	2	2	2	2	2	2	2	2	2	2
% Min. Load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant Charge (1)	(lb)	145/145	155/145	155/155	220/210	220/220	305/195	335/195	385/195	335/335	385/335	385/385
	(kg)	66/66	70/66	70/70	100/95	100/100	138/88	152/88	175/88	152/152	175/152	175/175
Oil Charge (1)	(lb)	14.4/14.4	15.3/14.4	15.3/15.3	21.8/20.8	21.8/21.8	22.8/22.8	33.7/20.3	39.1/20.3	33.7/24.3	39.1/33.7	39.1/39.1
	(kg)	54.5/54.5	57.9/54.5	57.9/57.9	82.5/78.7	82.5/82.5	86.3/86.3	127.6/76.8	148/76.8	127.6/92	148/127.6	148/148

Notes:

1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser



General Data

Table G-2 —General Data — 140-400 Ton 50 Hz Units-High Efficiency

Size		140	155	170	185	200	250	275	300	350	375	400
Type		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Compressor												
Quantity (1)		2	2	2	2	2	3	3	3	4	4	4
							70-70 /	85-85 /	100-100 /	85-85 /	100-100 /	100-100 /
Nominal Size (tons)		70/70	85/70	85/85	100/85	100/100	100	100	100	85-85	85-85	100-100
Evaporator												
Water Storage	(Gallons)	40	42	44	47	50	66	71	71	81	87	93
	(Liters)	151	156	163	176	188	249	267	267	304	327	350
Min. Flow	(GPM)	198	215	215	237	259	308	342	342	457	501	545
	(L/Sec)	13	14	14	15	16	20	22	22	29	32	34
Max. Flow	(GPM)	687	626	767	848	929	1070	1192	1192	1656	1818	1979
	(L/Sec)	43	39	48	54	59	68	75	75	105	115	125
Condenser												
Qty of Coils		4	4	4	4	4	8	8	8	8	8	8
Coil Length	(inches)	180/180	216/180	216/216	252/216	252/252	180/108	216/144	252/144	216/216	252/216	252/252
	(mm)	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	4572/2743	5486/3658	6401/3658	5486/5486	6401/5486	6401/6401
Coil Height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(mm)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of Rows		3	3	3	3	3	3	3	3	3	3	3
Condenser Fans												
Quantity (1)		5/5	6/5	6/6	7/6	7/7	10/6	12/6	14/6	12/12	14/12	14/14
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(mm)	762	762	762	762	762	762	762	762	762	762	762
Total Airflow	(cfm)	75575	83130	90687	98256	105826	120971	142969	158112	181371	194731	211648
	(m³/3/hr)	128390	141225	154063	166921	179781	205510	242881	268607	308120	330817	359556
Nominal fan speed	rpm	950	950	950	950	950	950	950	950	950	950	950
	rps	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
Tip Speed	(ft/min)	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461
	M/S	38	38	38	38	38	38	38	38	38	38	38
Motor Nominal (Ea)	HP	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	kW	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Min Starting/Oper Ambient (2)												
Std Unit	(Deg F)	25	25	25	25	25	25	25	25	25	25	25
	(Deg C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low Ambient	(Deg F)	0	0	0	0	0	0	0	0	0	0	0
	(Deg C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General Unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of Independent												
Refrigerant Circuits		2	2	2	2	2	2	2	2	2	2	2
% Min. Load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant Charge (1)	(lb)	155/155	220/210	220/220	230/220	230/230	335/195	385/215	430/215	385/385	430/385	430/430
	(kg)	70/70	100/95	100/100	104/100	104/104	152/88	175/97	195/97	175/175	195/175	195/195
Oil Charge (1)	(lb)	15.3/15.3	21.8/20.8	21.8/21.8	22.8/21.8	22.8/22.8	33.7/20.3	39.1/24.3	42.6/24.3	39.1/39.1	42.6/39.1	42.6/42.6
	(kg)	57.9/57.9	82.5/78.7	82.5/82.5	86.3/82.5	86.3/86.3	127.6/76.8	148/92	161/92	148/148	161.2/148	161.2/161.2

Notes:

1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

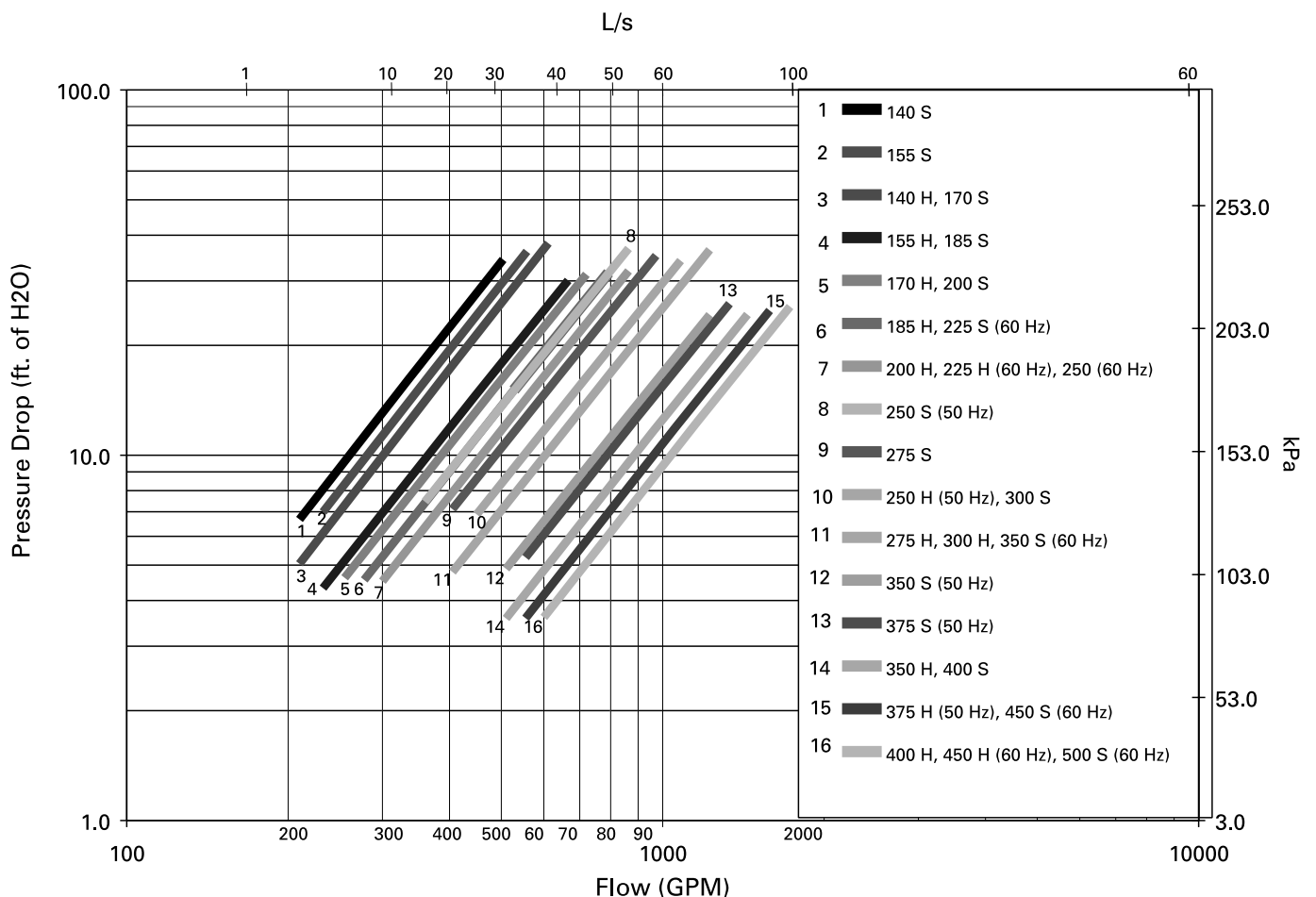
Performance Data

Adjustment Factors

Table P-1 — Performance Data Adjustment Factors

Fouling Factor	Chilled Water Temp.	Elevation											
		Sea Level			2000 ft			4000 ft			6000 ft		
		CAP	GPM	KW	CAP	GPM	KW	CAP	GPM	KW	CAP	GPM	KW
0.0001	8	0.997	1.246	0.999	0.987	1.233	1.012	0.975	1.217	1.027	0.960	1.200	1.045
	10	1.000	1.000	1.000	0.989	0.989	1.013	0.977	0.977	1.028	0.963	0.963	1.047
	12	1.003	0.835	1.001	0.992	0.826	1.014	0.979	0.816	1.030	0.965	0.804	1.048
	14	1.004	0.717	1.002	0.993	0.710	1.016	0.981	0.701	1.031	0.966	0.690	1.049
	16	1.006	0.629	1.003	0.995	0.622	1.016	0.982	0.614	1.032	0.968	0.605	1.050
0.00025	8	0.982	1.227	0.991	0.972	1.215	1.003	0.961	1.200	1.018	0.947	1.183	1.036
	10	0.986	0.985	0.992	0.975	0.975	1.005	0.963	0.963	1.020	0.950	0.950	1.038
	12	0.988	0.823	0.994	0.978	0.815	1.006	0.966	0.805	1.022	0.952	0.793	1.040
	14	0.991	0.708	0.995	0.980	0.700	1.008	0.968	0.692	1.023	0.954	0.682	1.041
	16	0.992	0.621	0.996	0.982	0.614	1.009	0.970	0.606	1.024	0.956	0.598	1.042

Figure P-1 — Evaporator Water Pressure Drop, All Units





Performance Data

Full Load Performance

Table P-1 — 60 Hz Standard Efficiency Machines in English Units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F)											
		85			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER
40	140 STD	140.5	139.8	10.9	131.1	152.4	9.4	121.2	166.6	8.0	111.1	182.5	6.7
	155 STD	154.4	152.3	11.0	144.2	166.0	9.5	133.6	181.5	8.1	122.7	198.8	6.8
	170 STD	168.5	164.8	11.0	157.5	179.7	9.5	146.1	196.5	8.2	134.5	215.2	6.9
	185 STD	184.1	183.7	10.8	172.2	199.9	9.4	159.8	218.1	8.0	147.1	238.5	6.8
	200 STD	199.8	202.7	10.7	186.9	220.1	9.3	173.5	239.9	7.9	159.6	262.0	6.7
	225 STD	220.2	222.6	10.7	206.2	241.6	9.3	191.6	263.2	8.0	176.4	287.4	6.8
	250 STD	241.1	242.8	10.8	225.9	263.4	9.4	209.9	286.9	8.1	193.4	313.1	6.8
	275 STD	267.0	266.8	10.8	250.0	290.4	9.4	232.3	317.0	8.0	213.9	346.7	6.8
	300 STD	301.3	320.6	10.6	281.1	348.3	9.2	260.2	379.5	7.8	235.9	408.7	6.6
	350 STD	338.7	346.9	10.6	317.5	376.0	9.2	295.3	409.1	7.9	272.2	446.3	6.8
	400 STD	400.2	408.4	10.6	374.6	442.8	9.2	347.9	481.9	7.9	320.1	525.8	6.7
42	450 STD	436.7	449.3	10.6	409.1	487.0	9.2	380.3	529.7	8.0	350.3	577.7	6.8
	500 STD	477.2	490.6	10.6	447.3	531.3	9.3	416.0	577.7	8.0	383.4	629.6	6.8
	140 STD	145.6	142.7	11.1	135.9	155.4	9.6	125.8	169.7	8.2	115.3	185.7	6.9
	155 STD	160.0	155.4	11.1	149.5	169.3	9.6	138.6	184.9	8.2	127.4	202.2	7.0
	170 STD	174.6	168.2	11.2	163.3	183.2	9.7	151.6	200.1	8.3	139.6	218.9	7.0
	185 STD	190.7	187.6	11.0	178.4	203.9	9.5	165.7	222.3	8.2	152.5	242.8	7.0
	200 STD	206.8	207.1	10.8	193.6	224.6	9.4	179.8	244.5	8.1	165.5	266.8	6.9
	225 STD	228.0	227.6	10.9	213.6	246.8	9.5	198.5	268.5	8.1	182.8	292.9	6.9
	250 STD	249.7	248.4	10.9	234.0	269.3	9.5	217.5	292.9	8.2	200.4	319.3	7.0
	275 STD	276.5	272.4	11.0	259.0	296.1	9.5	240.8	322.9	8.2	221.9	352.8	7.0
	300 STD	311.5	327.8	10.8	290.7	355.8	9.3	269.2	387.2	7.9	237.7	402.9	6.8
44	350 STD	350.7	354.8	10.7	328.8	384.2	9.4	305.9	417.5	8.1	282.0	454.9	6.9
	400 STD	414.3	417.3	10.8	388.0	452.0	9.4	360.5	491.4	8.1	331.9	535.5	6.9
	450 STD	452.2	459.5	10.8	423.7	497.5	9.4	394.0	540.6	8.1	363.1	588.9	6.9
	500 STD	494.2	502.1	10.8	463.3	543.2	9.4	431.0	589.9	8.1	397.2	642.2	6.9
	140 STD	150.8	145.7	11.3	140.8	158.5	9.7	130.4	172.9	8.3	119.6	188.9	7.0
	155 STD	165.7	158.6	11.3	154.8	172.6	9.8	143.7	188.3	8.4	132.1	205.7	7.1
	170 STD	180.8	171.7	11.4	169.1	186.8	9.9	157.1	203.8	8.5	144.8	222.6	7.2
	185 STD	197.4	191.6	11.2	184.7	208.0	9.7	171.6	226.5	8.3	158.1	247.1	7.1
	200 STD	214.0	211.6	11.0	200.4	229.2	9.6	186.1	249.3	8.2	171.4	271.7	7.0
	225 STD	236.0	232.7	11.0	221.1	252.0	9.6	205.5	273.9	8.3	189.3	298.4	7.0
	250 STD	258.4	254.2	11.1	242.2	275.2	9.6	225.2	299.0	8.3	207.4	325.6	7.1
46	275 STD	286.1	278.0	11.2	268.1	302.0	9.7	249.4	328.9	8.3	230.0	359.0	7.1
	300 STD	321.8	335.2	10.9	300.4	363.4	9.6	278.2	395.1	8.1	239.3	396.1	6.9
	350 STD	362.8	362.8	10.9	340.2	392.5	9.6	316.6	426.1	8.2	291.9	463.7	7.0
	400 STD	428.7	426.4	10.9	401.5	461.3	9.6	373.2	501.0	8.2	343.8	545.5	7.0
	450 STD	467.9	469.9	10.9	438.5	508.2	9.6	407.9	551.6	8.2	375.9	600.2	7.0
	500 STD	511.5	513.8	10.9	479.5	555.3	9.6	446.1	602.4	8.2	411.2	655.0	7.0

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115° F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-1 (Continued) — 60 Hz Standard Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
46	140 STD	156.0	148.7	11.4	145.7	161.6	9.9	135.0	176.1	8.5	123.9	192.2	7.2
	155 STD	171.4	161.9	11.5	160.3	176.0	10.0	148.8	191.8	8.6	136.9	209.3	7.3
	170 STD	187.0	175.2	11.6	175.1	190.4	10.0	162.8	207.5	8.6	150.1	226.5	7.3
	185 STD	204.1	195.6	11.3	191.1	212.1	9.9	177.7	230.7	8.5	163.7	251.5	7.2
	200 STD	221.2	216.2	11.1	207.2	233.9	9.7	192.6	254.1	8.4	177.4	276.6	7.1
	225 STD	244.0	237.9	11.2	228.6	257.4	9.7	212.5	279.5	8.4	195.8	304.1	7.2
	250 STD	267.2	260.1	11.2	250.5	281.3	9.8	232.9	305.3	8.4	214.6	332.0	7.2
	275 STD	295.9	283.8	11.3	277.3	307.9	9.9	258.1	335.1	8.5	238.2	365.3	7.2
	300 STD	332.2	342.7	11.0	310.2	371.2	9.6	287.4	403.1	8.2	241.7	390.4	7.1
	350 STD	375.1	371.1	11.0	351.7	401.0	9.6	327.3	434.8	8.3	301.9	472.6	7.1
	400 STD	443.2	435.7	11.1	415.2	470.9	9.7	386.1	510.8	8.3	351.9	542.6	7.2
	450 STD	483.7	480.6	11.1	453.5	519.1	9.7	421.9	562.8	8.3	388.9	611.7	7.1
	500 STD	528.9	525.9	11.1	496.0	567.8	9.7	461.4	615.1	8.4	425.3	668.0	7.1
48	140 STD	161.3	151.8	11.8	150.7	164.8	10.0	139.7	179.4	8.6	128.3	195.6	7.3
	155 STD	177.2	165.2	11.7	165.8	179.4	10.1	153.9	195.3	8.7	141.7	212.9	7.4
	170 STD	193.3	178.8	11.7	181.1	194.1	10.2	168.4	211.3	8.8	155.4	230.3	7.5
	185 STD	210.9	199.7	11.5	197.6	216.4	10.0	183.8	235.1	8.6	169.4	255.9	7.3
	200 STD	228.5	220.8	11.3	214.1	238.7	9.8	199.1	259.0	8.5	183.4	281.7	7.2
	225 STD	252.1	243.2	11.3	236.3	262.9	9.9	219.7	285.1	8.5	202.4	309.9	7.3
	250 STD	276.2	266.1	11.3	258.9	287.5	9.9	240.7	311.6	8.5	220.9	336.6	7.3
	275 STD	305.7	289.7	11.5	286.7	314.0	10.0	266.9	341.3	8.6	246.5	371.6	7.4
	300 STD	342.7	350.4	11.1	320.1	379.1	9.6	293.5	405.0	8.3	243.4	383.9	7.2
	350 STD	387.4	379.5	11.2	363.4	409.6	9.8	338.2	443.7	8.4	306.1	468.9	7.3
	400 STD	457.8	445.1	11.2	429.1	480.6	9.8	399.1	520.8	8.5	368.0	565.8	7.2
	450 STD	499.8	491.4	11.2	468.6	530.3	9.8	436.0	574.3	8.5	396.0	610.5	7.3
	500 STD	546.6	586.5	11.2	512.5	580.4	9.8	476.8	628.1	8.5	429.3	658.6	7.3
50	140 STD	166.7	155.0	11.8	155.8	168.1	10.2	144.4	182.7	8.8	132.7	199.0	7.4
	155 STD	183.1	168.6	11.8	171.3	182.9	10.3	159.2	198.9	8.8	146.6	216.6	7.5
	170 STD	199.8	182.5	11.9	187.2	197.9	10.4	174.2	215.1	8.9	160.8	234.2	7.6
	185 STD	217.8	203.9	11.6	204.1	220.7	10.2	189.9	239.5	8.8	175.2	260.5	7.5
	200 STD	235.9	225.6	11.4	221.1	243.6	10.0	205.6	264.0	8.6	189.6	286.8	7.4
	225 STD	260.3	248.7	11.4	244.0	268.5	10.0	226.9	290.8	8.6	205.3	307.4	7.4
	250 STD	285.3	272.3	11.5	267.4	293.9	10.0	248.6	318.1	8.7	222.9	331.5	7.5
	275 STD	315.7	295.7	11.6	296.1	320.2	10.1	275.8	347.6	8.8	251.5	371.8	7.5
	300 STD	353.2	358.2	11.2	330.0	387.1	9.7	295.4	397.9	8.5	245.0	377.6	7.4
	350 STD	399.9	388.1	11.3	375.2	418.4	9.9	349.2	452.7	8.5	308.9	461.8	7.4
	400 STD	472.6	454.8	11.3	443.0	490.5	9.9	412.3	530.9	8.6	374.8	564.9	7.4
	450 STD	515.9	502.5	11.3	483.9	541.7	9.9	450.3	585.9	8.6	398.3	598.4	7.4
	500 STD	564.4	550.8	11.3	529.3	593.3	9.9	492.4	641.3	8.6	431.3	643.9	7.5

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115° F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.



Performance Data

Full Load Performance

Table P-2 — 60 Hz High Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
40	140 HIGH	145.8	134.5	11.5	136.2	146.2	9.9	126.2	159.5	8.5	115.9	174.5	7.2
	155 HIGH	159.4	146.0	11.5	149.0	158.9	10.0	138.3	173.6	8.6	127.3	190.0	7.3
	170 HIGH	173.2	157.6	11.6	162.0	171.7	10.1	150.6	187.7	8.6	138.8	205.5	7.3
	185 HIGH	189.9	177.0	11.4	177.8	192.2	9.9	165.3	209.4	8.5	152.3	228.8	7.2
	200 HIGH	206.8	196.7	11.2	193.7	212.8	9.8	180.1	231.4	8.4	166.0	252.3	7.2
	225 HIGH	226.7	216.7	11.2	212.8	234.4	9.8	198.2	254.8	8.5	183.0	277.7	7.2
	250 HIGH	245.7	236.1	11.1	230.8	255.5	9.7	215.2	277.7	8.4	199.0	302.7	7.2
	275 HIGH	276.8	257.6	11.5	259.3	279.6	10.0	241.1	304.7	8.6	222.4	332.9	7.3
	300 HIGH	308.9	307.8	11.2	289.0	333.6	9.7	268.3	362.9	8.3	246.9	395.7	7.1
	350 HIGH	343.4	316.7	11.4	321.5	344.7	9.9	298.8	376.4	8.5	275.5	411.8	7.3
42	400 HIGH	409.9	396.5	11.0	384.2	428.5	9.6	357.4	465.2	8.3	329.5	506.6	7.1
	140 HIGH	151.3	137.3	11.7	141.5	149.0	10.2	131.2	162.4	8.7	120.6	177.5	7.4
	155 HIGH	165.4	149.0	11.8	154.8	161.9	10.2	143.7	176.7	8.8	132.4	193.2	7.5
	170 HIGH	179.6	160.7	11.8	168.2	174.9	10.3	156.4	191.0	8.8	144.3	208.9	7.5
	185 HIGH	196.9	180.7	11.6	184.5	196.0	10.1	171.6	213.3	8.7	158.3	232.8	7.4
	200 HIGH	214.5	200.9	11.4	201.0	217.2	10.0	187.0	235.8	8.6	172.4	256.9	7.3
	225 HIGH	235.1	221.6	11.4	220.7	239.4	10.0	205.6	259.9	8.7	190.0	282.9	7.4
	250 HIGH	254.8	241.4	11.3	239.4	261.0	9.9	223.3	283.4	8.6	206.5	308.6	7.3
	275 HIGH	287.1	263.0	11.7	269.1	285.1	10.2	250.4	310.3	8.8	231.1	338.6	7.5
	300 HIGH	319.8	314.7	11.3	299.4	340.6	9.9	278.0	370.1	8.5	255.9	403.2	7.2
44	350 HIGH	356.3	323.2	11.7	333.8	351.3	10.2	310.5	383.1	8.7	286.5	418.8	7.4
	400 HIGH	425.2	405.2	11.2	398.6	437.4	9.8	371.0	474.2	8.5	342.3	515.9	7.3
	140 HIGH	157.0	140.1	11.9	146.8	151.9	10.4	136.3	165.4	8.9	125.3	180.5	7.6
	155 HIGH	171.5	152.0	12.0	160.6	165.0	10.4	149.2	179.8	9.0	137.5	196.4	7.6
	170 HIGH	186.2	164.0	12.0	174.5	178.2	10.5	162.4	194.4	9.0	149.9	212.4	7.7
	185 HIGH	204.1	184.5	11.8	191.3	199.8	10.3	178.1	217.3	8.9	164.3	236.8	7.6
	200 HIGH	222.2	205.3	11.6	208.4	221.6	10.1	193.9	240.4	8.8	178.9	261.5	7.5
	225 HIGH	243.6	226.5	11.6	228.8	244.5	10.2	213.2	265.1	8.8	197.0	288.3	7.5
	250 HIGH	263.9	247.0	11.5	248.1	266.7	10.1	231.4	289.2	8.7	214.0	314.5	7.5
	275 HIGH	297.6	268.5	11.9	279.1	290.7	10.4	259.8	316.1	8.9	240.0	344.5	7.6
	300 HIGH	331.0	321.6	11.5	309.8	347.8	10.0	287.9	377.5	8.6	265.1	410.8	7.3
	350 HIGH	369.4	329.7	11.9	346.2	358.0	10.4	322.3	390.0	8.9	297.6	425.8	7.6
	400 HIGH	440.6	414.1	11.4	413.3	446.4	10.0	384.8	483.5	8.6	355.2	525.4	7.4

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-2 (Continued) — 60 Hz High Efficiency Machines in English Units

Evaporator Leaving Water Temperature (F)		Condenser Entering Air Temperature (F)											
		85			95			105			115		
		Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
46	140 HIGH	162.8	143.0	12.1	152.3	154.9	10.6	141.4	168.4	9.1	130.1	183.6	7.7
	155 HIGH	177.8	155.1	12.2	166.5	168.2	10.6	154.8	183.1	9.2	142.8	199.7	7.8
	170 HIGH	192.9	167.3	12.3	180.9	181.6	10.7	168.4	197.8	9.2	155.6	215.9	7.9
	185 HIGH	211.4	188.4	12.0	198.3	203.8	10.5	184.6	221.3	9.1	170.5	241.0	7.7
	200 HIGH	230.1	209.7	11.7	215.8	226.2	10.3	200.9	245.0	8.9	185.5	266.2	7.6
	225 HIGH	252.3	231.6	11.8	236.9	249.7	10.3	220.9	270.4	9.0	204.2	293.7	7.7
	250 HIGH	273.3	252.6	11.6	256.9	272.5	10.2	239.7	295.1	8.9	221.7	320.6	7.6
	275 HIGH	308.3	274.1	12.1	289.2	296.5	10.5	269.4	321.9	9.1	249.0	350.5	7.8
	300 HIGH	342.2	328.8	11.6	320.4	355.1	10.1	297.8	385.0	8.7	274.4	418.5	7.4
	350 HIGH	382.7	336.4	12.1	358.9	364.8	10.6	334.3	397.0	9.1	309.0	432.9	7.8
48	400 HIGH	456.3	423.1	11.6	428.1	455.6	10.1	398.7	492.9	8.8	368.3	535.0	7.5
	140 HIGH	168.6	145.9	12.3	157.8	157.9	10.8	146.6	171.5	9.3	135.0	186.8	7.9
	155 HIGH	184.1	158.2	12.4	172.5	171.4	10.8	160.5	186.4	9.3	148.1	203.1	8.0
	170 HIGH	199.8	170.6	12.5	187.3	185.1	10.9	174.5	201.3	9.4	161.4	219.5	8.0
	185 HIGH	218.8	192.3	12.2	205.3	207.8	10.6	191.2	225.4	9.2	176.7	245.1	7.9
	200 HIGH	238.2	214.3	11.9	223.4	230.8	10.5	208.1	249.7	9.1	192.2	271.0	7.8
	225 HIGH	261.0	236.8	11.9	245.2	255.0	10.5	228.7	275.8	9.1	211.4	299.2	7.8
	250 HIGH	282.7	258.4	11.8	265.8	278.4	10.4	248.0	301.2	9.0	229.4	326.8	7.7
	275 HIGH	319.1	279.8	12.3	299.4	302.3	10.7	279.1	327.8	9.3	258.1	356.5	8.0
	300 HIGH	353.5	336.1	11.8	331.1	362.6	10.3	307.9	392.6	8.9	283.7	426.3	7.5
50	350 HIGH	396.2	343.2	12.3	371.8	371.8	10.7	346.5	404.1	9.3	320.5	440.2	8.0
	400 HIGH	472.1	432.4	11.7	443.1	465.1	10.3	412.9	502.5	9.0	381.5	544.8	7.7
	140 HIGH	174.5	148.9	12.5	163.4	161.0	10.9	151.9	174.7	9.4	139.9	190.0	8.1
	155 HIGH	190.5	161.5	12.6	178.6	174.7	11.0	166.2	189.7	9.5	153.5	206.5	8.1
	170 HIGH	206.7	174.1	12.7	193.9	188.6	11.1	180.8	204.9	9.6	167.2	223.1	8.2
	185 HIGH	226.3	196.3	12.3	212.4	211.9	10.8	197.9	229.6	9.4	183.0	249.4	8.0
	200 HIGH	246.3	218.9	12.1	231.1	235.5	10.6	215.3	254.5	9.2	198.9	275.9	7.9
	225 HIGH	269.9	242.1	12.1	253.6	260.4	10.6	236.5	281.3	9.2	218.7	304.8	7.9
	250 HIGH	292.3	264.3	12.0	274.8	284.5	10.5	256.5	307.4	9.1	237.2	333.0	7.9
	275 HIGH	330.0	285.6	12.4	309.9	308.2	10.9	288.9	333.9	9.5	267.4	362.6	8.1
50	300 HIGH	365.0	343.5	11.9	342.0	370.2	10.4	318.0	400.4	9.0	286.9	421.4	7.7
	350 HIGH	409.9	350.2	12.5	384.8	378.9	10.9	358.9	411.3	9.5	332.2	447.5	8.1
	400 HIGH	488.2	441.8	11.9	458.3	474.6	10.5	427.2	512.2	9.1	395.0	554.7	7.8

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.



Performance Data

Full Load Performance

Table P-3 — 60 Hz Standard Efficiency Machines in SI Units

		Condenser Entering Air Temperature (C)											
		30			35			40			45		
Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	kW cooling	kW input	COP	kW output	kW input	COP	kW output	kW input	COP	kW output	kW input	COP
5	140 STD	499.6	142.5	3.2	469.4	153.9	2.8	437.7	166.7	2.4	405.4	180.7	2.1
	155 STD	549.2	155.2	3.2	516.1	167.7	2.8	482.4	181.6	2.4	447.6	196.9	2.1
	170 STD	599.5	167.9	3.2	564.0	181.5	2.8	527.4	196.5	2.5	490.1	213.1	2.1
	185 STD	654.7	187.2	3.2	616.4	201.9	2.8	577.0	218.3	2.4	535.8	236.4	2.1
	200 STD	710.2	206.6	3.1	669.1	222.4	2.7	625.8	240.1	2.4	581.5	259.7	2.1
	225 STD	783.0	226.9	3.1	738.0	244.2	2.8	690.9	263.6	2.4	642.4	285.1	2.1
	250 STD	857.6	247.6	3.1	808.3	266.4	2.8	757.3	287.4	2.4	704.3	310.7	2.1
	275 STD	949.7	271.8	3.2	894.8	293.3	2.8	838.2	317.2	2.4	779.5	343.5	2.1
	300 STD	1070.3	326.8	3.1	1005.6	352.0	2.7	938.4	380.1	2.4	869.2	411.0	2.0
	350 STD	1204.6	353.6	3.1	1136.4	380.1	2.7	1065.0	409.8	2.4	991.2	442.8	2.1
	400 STD	1422.9	416.1	3.1	1340.7	447.4	2.7	1254.9	482.5	2.4	1166.3	521.5	2.1
	450 STD	1553.0	458.0	3.1	1464.1	492.2	2.7	1371.6	530.6	2.4	1276.0	573.2	2.1
	500 STD	1697.2	500.2	3.1	1600.8	537.3	2.7	1500.3	578.9	2.4	1396.2	625.0	2.1
7	140 STD	532.3	147.8	3.3	500.3	159.4	2.9	466.9	172.3	2.5	432.8	186.6	2.1
	155 STD	584.7	160.9	3.3	550.3	173.6	2.9	514.4	187.7	2.5	477.8	203.2	2.2
	170 STD	638.2	174.2	3.3	600.9	187.9	2.9	562.9	203.1	2.5	523.5	219.9	2.2
	185 STD	696.9	194.3	3.2	656.4	209.2	2.9	614.6	225.8	2.5	571.7	244.1	2.2
	200 STD	755.2	214.6	3.2	711.6	230.7	2.8	666.3	248.6	2.5	619.5	268.5	2.1
	225 STD	832.9	236.1	3.2	785.1	253.6	2.8	735.5	273.3	2.5	684.2	295.0	2.1
	250 STD	912.4	258.0	3.2	860.4	277.1	2.8	805.9	298.4	2.5	749.6	322.0	2.2
	275 STD	1010.1	282.1	3.2	952.5	303.8	2.9	892.7	327.9	2.5	831.2	354.6	2.2
	300 STD	1135.0	340.1	3.2	1066.8	365.7	2.8	996.1	394.2	2.4	896.6	409.3	2.1
	350 STD	1280.9	368.1	3.2	1208.4	395.0	2.8	1132.9	425.1	2.5	1054.8	458.5	2.1
	400 STD	1513.3	432.5	3.2	1426.1	464.2	2.8	1336.1	499.7	2.5	1242.6	539.2	2.1
	450 STD	1651.8	476.7	3.2	1557.6	511.5	2.8	1459.8	550.4	2.5	1358.6	593.5	2.1
	500 STD	1805.8	521.4	3.2	1703.5	559.1	2.8	1597.0	601.2	2.5	1485.9	647.9	2.1
9	140 STD	565.4	153.4	3.4	531.6	165.1	3.0	496.8	178.2	2.6	460.6	192.6	2.2
	155 STD	621.3	166.9	3.4	584.7	179.8	3.0	547.4	194.0	2.6	508.8	209.6	2.2
	170 STD	677.9	180.6	3.4	638.9	194.5	3.0	598.8	209.9	2.6	557.6	226.8	2.3
	185 STD	739.4	201.7	3.3	697.2	216.8	2.9	653.3	233.6	2.6	607.9	252.1	2.2
	200 STD	801.3	223.0	3.3	755.2	239.2	2.9	707.8	257.4	2.5	658.2	277.5	2.2
	225 STD	883.9	245.6	3.3	833.6	263.5	2.9	780.9	283.3	2.5	726.4	305.3	2.2
	250 STD	968.7	268.8	3.3	913.5	288.2	2.9	855.8	309.8	2.6	795.7	333.6	2.2
	275 STD	1072.0	292.6	3.3	1011.2	314.6	2.9	948.6	339.1	2.6	884.3	366.0	2.2
	300 STD	1200.7	353.9	3.2	1129.0	379.9	2.8	1054.4	408.7	2.5	908.9	397.1	2.2
	350 STD	1358.6	383.2	3.2	1281.9	410.5	2.9	1202.5	441.0	2.5	1119.5	474.7	2.2
	400 STD	1605.1	449.5	3.3	1513.6	481.6	2.9	1418.7	517.6	2.5	1320.6	557.4	2.2
	450 STD	1752.4	496.2	3.2	1653.2	531.5	2.9	1549.9	570.8	2.5	1442.6	614.4	2.2
	500 STD	1916.6	543.5	3.2	1807.9	581.7	2.9	1695.1	624.4	2.5	1577.3	671.5	2.2

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kW_o/kW_i). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-4 — 60 Hz High Efficiency Machines in SI Units

		Condenser Entering Air Temperature (C)											
		30			35			40			45		
Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	kW cooling	kW input	COP	kW output	kW input	COP	kW output	kW input	COP	kW output	kW input	COP
5	140 HIGH	519.0	137.0	3.3	488.0	147.6	2.9	456.0	159.6	2.6	423.3	172.8	2.2
	155 HIGH	567.5	148.7	3.4	534.1	160.4	3.0	499.6	173.6	2.6	464.5	188.1	2.2
	170 HIGH	616.4	160.5	3.4	580.5	173.3	3.0	543.9	187.6	2.6	506.0	203.5	2.3
	185 HIGH	675.8	180.3	3.3	637.1	194.1	2.9	596.7	209.5	2.6	555.5	226.7	2.2
	200 HIGH	735.9	200.3	3.3	694.1	215.0	2.9	650.1	231.6	2.5	605.1	250.2	2.2
	225 HIGH	806.9	220.8	3.3	761.9	236.9	2.9	715.2	255.2	2.6	666.6	275.5	2.2
	250 HIGH	874.8	240.6	3.2	826.6	258.2	2.9	776.7	278.2	2.5	724.6	300.4	2.2
	275 HIGH	985.2	262.4	3.3	928.9	282.4	3.0	870.9	304.9	2.6	810.8	329.9	2.2
	300 HIGH	1098.4	313.7	3.3	1034.4	337.1	2.9	968.0	363.4	2.5	899.4	392.6	2.2
	350 HIGH	1459.1	403.8	3.2	1376.2	432.9	2.9	1290.0	465.8	2.5	1201.1	502.6	2.2
7	400 HIGH	519.0	137.0	3.3	488.0	147.6	2.9	456.0	159.6	2.6	423.3	172.8	2.2
	140 HIGH	554.5	142.1	3.5	522.1	152.8	3.1	488.4	164.9	2.7	453.6	178.3	2.3
	155 HIGH	605.8	154.1	3.5	571.0	166.0	3.1	534.8	179.3	2.7	497.5	193.9	2.3
	170 HIGH	657.8	166.3	3.5	620.2	179.3	3.1	581.5	193.7	2.7	541.8	209.7	2.3
	185 HIGH	721.1	187.1	3.4	680.0	201.0	3.0	637.8	216.6	2.7	594.2	234.0	2.3
	200 HIGH	785.1	208.2	3.4	740.5	223.0	3.0	694.4	239.8	2.6	646.9	258.5	2.3
	225 HIGH	860.7	229.7	3.4	812.9	246.1	3.0	763.3	264.5	2.6	712.0	285.0	2.3
	250 HIGH	932.4	250.5	3.3	881.5	268.4	3.0	828.4	288.6	2.6	773.2	311.0	2.3
	275 HIGH	1051.3	272.2	3.5	991.9	292.5	3.1	930.7	315.2	2.7	867.4	340.3	2.3
	300 HIGH	1168.4	326.3	3.3	1100.5	350.0	2.9	1030.5	376.6	2.6	958.5	406.1	2.2
9	350 HIGH	1304.8	334.4	3.5	1230.6	360.1	3.1	1154.7	388.7	2.7	1076.2	420.5	2.3
	400 HIGH	1556.2	419.8	3.3	1468.6	449.2	2.9	1377.9	482.4	2.6	1283.7	519.5	2.3
	140 HIGH	591.0	147.4	3.6	556.9	158.2	3.2	521.4	170.4	2.8	484.5	183.9	2.4
	155 HIGH	645.5	159.8	3.6	608.6	171.8	3.2	570.6	185.2	2.8	531.6	199.9	2.4
	170 HIGH	700.4	172.3	3.6	661.0	185.4	3.2	620.6	200.0	2.8	578.7	216.1	2.4
	185 HIGH	767.5	194.2	3.5	724.3	208.2	3.1	679.6	224.0	2.8	633.9	241.4	2.4
	200 HIGH	835.1	216.3	3.5	788.3	231.3	3.1	739.8	248.2	2.7	689.5	267.1	2.4
	225 HIGH	915.6	239.0	3.5	865.3	255.6	3.1	812.9	274.2	2.7	758.4	294.9	2.4
	250 HIGH	991.5	260.9	3.4	937.7	279.0	3.0	881.5	299.4	2.7	822.7	322.1	2.3
	275 HIGH	1119.1	282.5	3.6	1056.6	302.9	3.2	992.2	325.8	2.8	925.8	351.1	2.4
	300 HIGH	1239.4	339.3	3.4	1168.4	363.4	3.0	1094.5	390.3	2.6	1018.2	420.1	2.3
	350 HIGH	1389.5	346.6	3.6	1311.8	372.5	3.2	1231.7	401.4	2.8	1149.7	433.4	2.4
	400 HIGH	1655.7	436.4	3.4	1563.6	466.0	3.0	1467.6	499.5	2.7	1368.8	536.9	2.3

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kW_o/kW_i). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6 C.
6. Ambient temperatures 40C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.



Performance Data

Full Load Performance

Table P-5 — 50 Hz Standard Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
40	140 STD	138.1	144.4	10.7	128.4	158.1	9.1	118.4	173.4	7.7	108.1	190.2	6.4
	155 STD	151.2	159.6	10.6	140.6	174.3	9.0	129.7	190.6	7.7	118.5	208.7	6.4
	170 STD	164.4	175.0	10.5	153.0	190.6	9.0	141.1	208.0	7.6	128.9	227.4	6.4
	185 STD	181.9	190.9	10.6	169.6	207.7	9.1	156.8	226.6	7.8	143.6	247.6	6.6
	200 STD	199.7	206.9	10.8	186.4	225.1	9.3	172.7	245.4	7.9	158.4	268.0	6.7
	250 STD	235.4	246.8	10.6	219.6	269.7	9.1	203.2	295.2	7.8	186.2	323.3	6.5
	275 STD	263.6	279.2	10.5	245.8	303.8	9.1	227.4	331.4	7.7	208.4	362.1	6.5
	300 STD	299.1	312.6	10.7	279.4	339.7	9.2	258.9	370.1	7.9	234.2	396.6	6.7
	350 STD	325.4	350.1	10.4	303.0	381.2	8.9	279.8	416.0	7.6	255.9	454.7	6.4
	375 STD	359.3	382.1	10.5	335.3	415.8	9.0	310.4	453.5	7.7	284.6	495.3	6.5
42	400 STD	396.1	416.2	10.6	369.9	452.3	9.2	342.7	492.6	7.8	310.0	527.7	6.6
	140 STD	143.0	147.4	10.8	133.0	161.3	9.3	122.7	176.7	7.8	110.9	191.1	6.6
	155 STD	156.4	163.1	10.7	145.5	177.9	9.2	134.3	194.4	7.8	121.0	208.7	6.6
	170 STD	170.1	178.9	10.6	158.3	194.7	9.1	146.1	212.2	7.8	131.8	227.8	6.5
	185 STD	188.1	195.2	10.8	175.4	212.2	9.3	162.2	231.3	7.9	145.9	246.6	6.7
	200 STD	206.5	211.6	10.9	192.8	230.0	9.4	178.6	250.6	8.0	159.2	263.5	6.8
	250 STD	243.4	252.1	10.8	227.2	275.2	9.3	210.3	301.0	7.9	188.0	319.0	6.7
	275 STD	272.6	285.4	10.7	254.2	310.3	9.2	235.2	338.2	7.8	209.8	356.4	6.6
	300 STD	309.3	319.7	10.8	289.0	347.2	9.3	267.8	377.9	8.0	236.5	392.0	6.8
	350 STD	336.5	357.9	10.5	313.5	389.3	9.0	289.6	424.4	7.7	259.2	450.4	6.5
44	375 STD	371.5	390.7	10.6	346.8	424.7	9.2	321.1	462.8	7.8	286.4	487.5	6.6
	400 STD	409.6	425.8	10.7	382.6	462.2	9.3	354.6	503.0	7.9	313.0	521.8	6.8
	140 STD	147.9	150.5	11.0	137.6	164.5	9.4	127.0	180.1	8.0	111.3	186.6	6.7
	155 STD	161.7	166.6	10.9	150.5	181.6	9.3	139.0	198.2	7.9	122.3	205.9	6.7
	170 STD	175.8	183.0	10.7	163.6	198.8	9.2	151.1	216.5	7.9	132.8	224.0	6.7
	185 STD	194.4	199.6	10.9	181.3	216.8	9.4	167.8	236.1	8.0	147.5	243.7	6.8
	200 STD	213.3	216.4	11.0	199.3	235.0	9.5	184.7	255.9	8.1	160.7	260.0	7.0
	250 STD	251.5	257.5	10.9	234.8	280.8	9.4	217.5	306.9	8.0	189.6	314.1	6.8
	275 STD	281.6	291.8	10.8	262.7	316.9	9.3	243.2	345.0	7.9	211.0	349.9	6.8
	300 STD	319.5	327.0	10.9	298.6	354.8	9.5	276.9	385.9	8.1	237.4	384.1	7.0
	350 STD	347.8	365.9	10.6	324.0	397.5	9.2	299.5	432.9	7.8	262.2	445.4	6.6
	375 STD	383.8	399.5	10.7	358.4	433.8	9.3	332.0	472.3	7.9	289.4	481.5	6.8
	400 STD	423.2	435.5	10.9	395.5	472.4	9.4	366.6	513.7	8.0	315.9	514.8	6.9

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-5 (Continued) — 50 Hz Standard Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Ton	kW input	EER	Tons	kW input	EER
46	140 STD	152.8	153.7	11.1	142.3	167.8	9.5	131.4	183.5	8.1	112.7	184.4	6.9
	155 STD	167.1	170.2	11.0	155.6	185.3	9.4	143.7	202.1	8.0	123.4	202.7	6.9
	170 STD	181.5	187.0	10.9	169.0	203.0	9.4	156.1	220.8	8.0	134.2	221.2	6.9
	185 STD	200.7	204.0	11.0	187.3	221.5	9.5	173.3	240.9	8.1	148.1	238.7	7.0
	200 STD	220.3	221.3	11.1	205.8	240.1	9.6	190.8	261.2	8.2	162.1	256.1	7.1
	250 STD	259.7	263.0	11.1	242.6	286.6	9.5	224.8	312.9	8.1	191.0	308.5	7.0
	275 STD	290.7	298.3	10.9	271.3	323.7	9.4	251.2	352.0	8.1	211.9	342.6	7.0
	300 STD	329.8	334.5	11.0	308.3	362.6	9.6	286.0	394.0	8.2	239.3	377.8	7.1
	350 STD	359.1	374.1	10.7	334.7	406.0	9.3	309.5	441.6	7.9	263.8	436.9	6.8
	375 STD	396.2	408.4	10.9	370.1	443.2	9.4	342.9	482.0	8.0	292.1	474.7	6.9
48	400 STD	436.9	445.5	11.0	408.4	482.8	9.5	378.8	524.6	8.1	318.5	506.6	7.1
	140 STD	157.8	157.0	11.3	147.0	171.2	9.7	135.8	187.0	8.2	113.5	180.6	7.1
	155 STD	172.5	173.9	11.1	160.6	189.1	9.6	148.4	206.0	8.1	124.4	199.2	7.1
	170 STD	187.3	191.2	11.0	174.5	207.3	9.5	161.2	225.2	8.1	134.9	216.5	7.0
	185 STD	207.1	208.6	11.1	193.3	226.2	9.6	178.9	245.9	8.2	149.4	234.9	7.2
	200 STD	227.3	226.3	11.3	212.4	245.4	9.7	196.9	266.8	8.3	163.3	251.5	7.3
	250 STD	268.0	268.6	11.2	250.4	292.4	9.6	231.0	316.8	8.2	193.4	304.7	7.2
	275 STD	299.8	304.9	11.0	279.9	330.5	9.5	258.2	356.9	8.2	213.7	336.9	7.2
	300 STD	340.3	342.1	11.2	318.2	370.5	9.7	291.3	394.3	8.3	242.3	373.4	7.3
	350 STD	370.6	382.4	10.9	345.5	414.5	9.4	319.6	450.4	8.0	266.4	430.3	7.0
50	375 STD	408.7	417.6	11.0	381.9	452.6	9.5	354.0	491.8	8.1	294.6	466.9	7.1
	400 STD	450.8	455.7	11.1	421.5	493.5	9.6	385.8	525.1	8.3	320.8	497.3	7.3
	140 STD	162.9	160.3	11.4	151.8	174.7	9.8	138.3	186.4	8.4	114.7	177.8	7.3
	155 STD	177.9	177.7	11.2	165.8	193.0	9.7	150.6	204.4	8.3	125.3	195.3	7.2
	170 STD	193.2	195.5	11.1	180.0	211.7	9.6	164.4	225.4	8.2	136.1	212.8	7.2
	185 STD	213.6	213.3	11.2	199.4	231.1	9.7	181.5	244.4	8.4	150.6	230.5	7.4
	200 STD	234.4	231.4	11.4	219.1	250.8	9.8	197.9	261.3	8.5	164.7	247.2	7.5
	250 STD	276.4	274.3	11.3	258.3	298.4	9.8	232.9	311.6	8.4	194.4	298.0	7.4
	275 STD	309.1	311.7	11.1	288.6	337.5	9.6	259.7	350.1	8.4	216.1	332.7	7.3
	300 STD	350.8	349.8	11.3	328.1	378.7	9.8	292.5	385.8	8.6	244.1	367.5	7.5
50	350 STD	382.1	390.9	11.0	356.3	423.2	9.5	323.1	445.2	8.2	268.9	423.6	7.2
	375 STD	421.4	426.9	11.1	393.8	462.3	9.6	356.0	482.5	8.3	297.3	459.3	7.3
	400 STD	464.9	466.1	11.2	434.7	504.4	9.7	387.5	513.9	8.5	323.3	489.4	7.4

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.



Performance Data

Full Load Performance

Table P-6 — 50 Hz High Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER
40	140 HIGH	144.3	137.3	11.5	134.5	150.1	9.9	124.3	164.4	8.4	113.9	180.2	7.0
	155 HIGH	157.2	151.8	11.4	146.5	165.5	9.8	135.4	180.9	8.3	124.1	198.0	7.0
	170 HIGH	170.1	166.4	11.2	158.6	181.0	9.7	146.6	197.5	8.2	134.4	215.8	6.9
	185 HIGH	188.8	182.6	11.4	176.3	198.4	9.8	163.4	216.2	8.4	150.1	236.0	7.1
	200 HIGH	207.9	199.1	11.5	194.5	216.1	10.0	180.6	235.2	8.5	166.1	256.5	7.2
	250 HIGH	245.3	242.1	11.2	228.7	263.8	9.6	211.7	288.1	8.2	194.1	315.1	6.9
	275 HIGH	274.9	267.9	11.3	256.7	290.8	9.8	237.9	316.7	8.4	218.5	345.6	7.1
	300 HIGH	309.5	300.0	11.4	289.9	325.4	9.9	269.5	354.0	8.5	248.3	385.9	7.2
	350 HIGH	337.4	334.0	11.1	314.7	363.0	9.6	291.2	395.7	8.2	266.9	432.2	6.9
	375 HIGH	374.8	367.5	11.2	350.2	398.7	9.7	324.7	434.1	8.3	298.4	473.5	7.0
42	400 HIGH	412.1	401.1	11.3	385.6	434.6	9.8	358.1	472.4	8.4	329.6	514.7	7.2
	140 HIGH	149.7	140.1	11.7	139.6	153.0	10.1	129.1	167.4	8.6	118.3	183.4	7.2
	155 HIGH	162.9	155.0	11.5	151.9	168.8	9.9	140.5	184.3	8.5	128.9	201.6	7.1
	170 HIGH	176.2	170.1	11.4	164.3	184.7	9.8	152.1	201.3	8.4	139.4	219.8	7.1
	185 HIGH	195.6	186.7	11.5	182.7	202.6	10.0	169.4	220.5	8.5	155.7	240.5	7.2
	200 HIGH	215.4	203.6	11.7	201.6	220.7	10.1	187.2	240.0	8.7	172.3	261.6	7.4
	250 HIGH	254.1	247.3	11.4	237.1	269.3	9.8	219.5	293.8	8.3	198.1	314.9	7.0
	275 HIGH	284.8	273.8	11.5	266.0	297.0	9.9	246.6	323.1	8.5	226.6	352.2	7.2
	300 HIGH	320.5	306.7	11.6	300.3	332.3	10.0	279.2	361.2	8.6	257.4	393.5	7.3
	350 HIGH	349.6	341.4	11.3	326.2	370.5	9.7	302.0	403.5	8.3	277.0	440.2	7.0
44	375 HIGH	388.3	375.7	11.4	363.0	407.2	9.9	336.7	442.9	8.5	309.6	482.6	7.2
	400 HIGH	426.9	410.2	11.5	399.7	444.0	10.0	371.3	482.3	8.6	341.9	524.9	7.3
	140 HIGH	155.2	143.0	11.9	144.7	156.0	10.3	134.0	170.5	8.7	122.9	186.6	7.4
	155 HIGH	168.7	158.3	11.7	157.4	172.2	10.1	145.7	187.8	8.6	133.7	205.2	7.3
	170 HIGH	182.4	173.8	11.6	170.2	188.6	10.0	157.6	205.2	8.5	144.6	223.8	7.2
	185 HIGH	202.5	190.8	11.7	189.2	206.9	10.1	175.5	225.0	8.7	161.4	245.1	7.4
	200 HIGH	223.0	208.1	11.8	208.7	225.5	10.3	193.9	245.0	8.8	178.5	266.8	7.5
	250 HIGH	263.0	252.7	11.5	245.5	274.8	9.9	227.4	299.6	8.5	198.8	308.1	7.2
	275 HIGH	294.8	279.9	11.6	275.5	303.2	10.1	255.5	329.5	8.7	234.9	358.9	7.3
	300 HIGH	331.6	313.6	11.7	310.8	339.5	10.2	289.1	368.7	8.8	266.6	401.3	7.5
	350 HIGH	362.0	348.9	11.4	337.9	378.3	9.9	312.9	411.4	8.5	287.2	448.4	7.2
	375 HIGH	402.0	384.1	11.5	375.9	415.9	10.0	348.8	451.8	8.6	320.9	491.9	7.3
	400 HIGH	442.0	419.5	11.6	413.9	453.7	10.1	384.6	492.3	8.7	354.3	535.4	7.4

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-6 (Continued) — 50 Hz High Efficiency Machines in English Units

		Condenser Entering Air Temperature (F)											
		85			95			105			115		
Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER	Tons	kW input	EER
46	140 HIGH	160.7	146.0	12.1	150.0	159.0	10.4	138.9	173.7	8.9	127.5	189.9	7.5
	155 HIGH	174.6	161.7	11.9	163.0	175.7	10.3	151.0	191.4	8.8	138.6	208.8	7.4
	170 HIGH	188.7	177.6	11.7	176.1	192.5	10.1	163.1	209.2	8.7	149.8	227.9	7.4
	185 HIGH	209.4	195.0	11.9	195.8	211.2	10.3	181.7	229.5	8.8	167.1	249.8	7.5
	200 HIGH	230.7	212.8	12.0	216.0	230.3	10.4	200.7	250.0	9.0	184.9	272.0	7.6
	250 HIGH	272.1	258.2	11.7	254.1	280.5	10.1	235.4	305.5	8.6	200.3	302.7	7.4
	275 HIGH	304.9	286.1	11.8	285.0	309.6	10.2	264.4	336.1	8.8	243.2	365.7	7.5
	300 HIGH	342.9	320.6	11.9	321.5	346.7	10.3	299.1	376.3	8.9	275.9	409.2	7.6
	350 HIGH	374.5	356.6	11.6	349.7	386.1	10.0	324.0	419.5	8.6	297.6	456.6	7.3
	375 HIGH	415.8	392.7	11.7	389.0	424.8	10.2	361.1	461.0	8.7	332.3	501.4	7.4
48	400 HIGH	457.2	429.0	11.8	428.2	463.6	10.3	398.1	502.6	8.8	366.9	546.2	7.5
	140 HIGH	166.3	149.0	12.3	155.3	162.2	10.6	143.9	176.9	9.1	132.2	193.2	7.7
	155 HIGH	180.6	165.1	12.1	168.6	179.2	10.4	156.3	195.0	8.9	143.6	212.6	7.6
	170 HIGH	195.1	181.4	11.9	182.1	196.4	10.3	168.8	213.3	8.8	155.0	232.0	7.5
	185 HIGH	216.5	199.3	12.0	202.5	215.7	10.4	187.9	234.1	9.0	172.9	254.6	7.6
	200 HIGH	238.5	217.6	12.1	223.3	235.3	10.6	207.6	255.2	9.1	191.3	277.4	7.7
	250 HIGH	281.3	263.8	11.8	262.8	286.4	10.2	243.6	311.6	8.8	201.6	296.7	7.6
	275 HIGH	315.1	292.5	11.9	294.7	316.2	10.4	273.5	342.8	8.9	251.7	372.6	7.6
	300 HIGH	354.3	327.8	12.0	332.3	354.2	10.5	309.3	384.0	9.0	285.4	417.3	7.7
	350 HIGH	387.1	364.4	11.7	361.6	394.1	10.2	335.2	427.6	8.7	308.0	465.0	7.4
50	375 HIGH	429.8	401.4	11.8	402.2	433.8	10.3	373.5	470.3	8.9	343.9	511.0	7.5
	400 HIGH	472.6	438.7	11.9	442.8	473.7	10.4	411.8	513.1	9.0	377.9	553.6	7.7
	140 HIGH	172.0	152.0	12.5	160.7	165.3	10.8	149.0	180.1	9.2	136.9	196.5	7.8
	155 HIGH	186.7	168.6	12.2	174.4	182.8	10.6	161.7	198.7	9.1	148.6	216.3	7.7
	170 HIGH	201.5	185.4	12.0	188.2	200.4	10.4	174.5	217.4	9.0	160.3	236.2	7.6
	185 HIGH	223.6	203.7	12.1	209.2	220.2	10.6	194.3	238.8	9.1	178.0	257.8	7.7
	200 HIGH	246.3	222.5	12.3	230.8	240.3	10.7	214.6	260.5	9.2	195.1	277.4	7.9
	250 HIGH	290.6	269.5	12.0	271.5	292.3	10.4	248.1	311.0	8.9	202.7	290.0	7.8
	275 HIGH	325.5	298.9	12.1	304.4	322.8	10.5	282.7	349.7	9.1	259.1	377.2	7.7
	300 HIGH	365.9	335.1	12.1	343.2	361.8	10.6	319.5	391.9	9.1	288.2	411.8	7.9
50	350 HIGH	399.9	372.3	11.9	373.6	402.3	10.3	346.5	435.9	8.9	318.6	473.4	7.5
	375 HIGH	443.9	410.3	12.0	415.6	443.0	10.4	386.1	479.8	9.0	349.2	507.9	7.7
	400 HIGH	488.2	448.7	12.1	457.5	484.0	10.5	425.7	523.8	9.1	381.5	546.2	7.8

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.



Performance Data

Full Load Performance

Table P-7 — 50 Hz Standard Efficiency Machines in SI Units

		Condenser Entering Air Temperature (C)											
		30			35			40			45		
Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	kW cooling	kW input	COP	kW output	kW input	COP	kW output	kW input	COP	kW output	kW input	COP
5	140 STD	490.8	147.2	3.1	459.5	159.7	2.7	427.5	173.4	2.3	394.5	188.4	2.0
	155 STD	537.2	162.7	3.1	503.1	176.1	2.7	468.0	190.8	2.3	432.1	206.9	2.0
	170 STD	584.0	178.5	3.0	547.1	192.6	2.7	509.1	208.3	2.3	470.1	225.5	2.0
	185 STD	646.2	194.6	3.1	606.5	210.0	2.7	565.4	227.0	2.3	523.2	245.7	2.0
	200 STD	709.5	211.0	3.1	666.6	227.5	2.7	622.7	245.9	2.4	577.0	266.0	2.0
	250 STD	836.1	251.6	3.1	785.5	272.5	2.7	732.7	295.4	2.3	678.6	320.5	2.0
	275 STD	936.3	284.6	3.1	879.4	307.1	2.7	819.9	331.9	2.3	759.1	359.2	2.0
	300 STD	1062.9	318.7	3.1	999.2	343.5	2.7	933.5	370.8	2.4	865.6	400.8	2.0
	350 STD	1155.7	357.0	3.0	1083.6	385.2	2.6	1009.4	416.5	2.3	932.8	450.9	2.0
	375 STD	1276.3	389.6	3.1	1199.0	420.3	2.7	1119.1	454.2	2.3	1036.9	491.4	2.0
7	400 STD	1407.1	424.4	3.1	1323.1	457.2	2.7	1235.9	493.5	2.4	1145.9	533.4	2.0
	140 STD	521.4	152.8	3.2	488.7	165.5	2.8	455.0	179.5	2.4	418.4	193.3	2.0
	155 STD	570.3	169.1	3.1	534.4	182.7	2.7	497.9	197.6	2.4	455.7	211.3	2.0
	170 STD	619.9	185.7	3.1	581.2	200.1	2.7	541.1	216.0	2.4	497.9	232.0	2.0
	185 STD	685.6	202.5	3.2	643.8	218.2	2.8	600.5	235.5	2.4	551.3	251.4	2.1
	200 STD	752.8	219.6	3.2	707.8	236.6	2.8	661.0	255.3	2.4	601.6	268.9	2.1
	250 STD	887.4	261.4	3.2	834.0	282.6	2.8	778.8	305.9	2.4	707.8	322.9	2.1
	275 STD	993.3	296.1	3.1	932.8	318.9	2.7	870.6	344.2	2.4	788.6	360.9	2.1
	300 STD	1127.2	331.9	3.2	1060.1	357.1	2.8	990.8	385.1	2.4	889.5	397.5	2.1
	350 STD	1226.7	371.4	3.1	1150.8	400.1	2.7	1072.4	431.8	2.3	979.2	458.6	2.0
9	375 STD	1353.7	405.4	3.1	1272.4	436.6	2.7	1188.4	471.2	2.4	1081.9	496.9	2.1
	400 STD	1492.9	442.0	3.2	1404.3	475.5	2.8	1312.2	512.6	2.4	1177.5	529.2	2.1
	140 STD	553.1	158.7	3.3	518.6	171.6	2.8	483.1	185.7	2.5	424.4	187.2	2.1
	155 STD	604.4	175.8	3.2	566.8	189.5	2.8	528.1	204.7	2.4	463.8	205.7	2.1
	170 STD	656.4	193.2	3.2	615.3	207.7	2.8	573.5	223.8	2.4	503.5	224.4	2.1
	185 STD	725.7	210.8	3.2	681.8	226.7	2.8	636.4	244.3	2.5	558.7	244.1	2.2
	200 STD	796.7	228.6	3.3	749.3	246.0	2.9	700.4	265.1	2.5	608.3	260.3	2.2
	250 STD	939.1	271.4	3.2	883.2	293.1	2.8	825.2	316.8	2.5	718.0	313.2	2.2
	275 STD	1050.6	308.0	3.2	987.3	331.3	2.8	921.9	356.9	2.4	799.2	350.0	2.2
	300 STD	1192.6	345.6	3.2	1122.3	371.4	2.8	1049.5	399.9	2.5	903.3	386.8	2.2
	350 STD	1298.5	386.3	3.1	1218.6	415.4	2.8	1136.4	447.5	2.4	994.3	445.9	2.1
	375 STD	1432.4	421.8	3.2	1347.0	453.6	2.8	1258.7	488.8	2.4	1095.9	482.0	2.1
	400 STD	1580.1	460.3	3.2	1486.9	494.6	2.8	1390.2	532.5	2.5	1196.1	515.0	2.2

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kW/kW_i). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-8 — 50 Hz High Efficiency Machines in SI Units

		Condenser Entering Air Temperature (C)											
		30			35			40			45		
Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	kW cooling	kW input	COP	kW output	kW input	COP	kW output	kW input	COP	kW output	kW input	COP
5	140 HIGH	513.3	139.9	3.4	481.7	151.5	2.9	449.0	164.4	2.5	415.6	178.5	2.2
	155 HIGH	559.0	154.7	3.3	524.6	167.2	2.9	489.1	181.0	2.5	452.9	196.2	2.1
	170 HIGH	604.8	169.6	3.3	567.8	182.9	2.9	529.5	197.6	2.5	490.1	214.0	2.1
	185 HIGH	671.2	186.1	3.3	631.1	200.5	2.9	589.6	216.5	2.5	547.1	234.1	2.2
	200 HIGH	739.4	202.9	3.4	696.2	218.4	2.9	651.5	235.6	2.6	605.5	254.6	2.2
	250 HIGH	872.0	246.8	3.3	818.9	266.5	2.8	764.0	288.4	2.5	707.8	312.5	2.1
	275 HIGH	977.4	273.0	3.3	919.1	293.9	2.9	858.6	317.1	2.5	796.4	342.9	2.2
	300 HIGH	1100.9	305.8	3.3	1037.6	328.9	2.9	972.2	354.6	2.6	904.3	383.0	2.2
	350 HIGH	1200.0	340.4	3.2	1126.5	366.7	2.8	1051.3	396.1	2.5	973.6	428.6	2.1
	375 HIGH	1332.9	374.6	3.3	1253.8	403.0	2.9	1171.9	434.7	2.5	1087.9	469.8	2.2
7	400 HIGH	1465.8	408.8	3.3	1380.4	439.3	2.9	1292.1	473.3	2.5	1201.1	510.9	2.2
	140 HIGH	547.8	145.1	3.5	514.4	156.9	3.0	479.9	169.9	2.6	444.8	184.2	2.3
	155 HIGH	595.6	160.7	3.4	559.4	173.3	3.0	522.1	187.3	2.6	483.8	202.7	2.2
	170 HIGH	643.8	176.3	3.4	604.8	189.7	2.9	564.3	204.7	2.6	523.2	221.2	2.2
	185 HIGH	714.5	193.6	3.4	672.3	208.2	3.0	628.7	224.4	2.6	583.7	242.3	2.2
	200 HIGH	787.2	211.2	3.4	741.5	226.9	3.0	694.4	244.4	2.6	645.5	263.8	2.3
	250 HIGH	928.2	256.4	3.3	872.3	276.6	2.9	814.7	298.8	2.5	747.5	319.0	2.2
	275 HIGH	1040.4	284.0	3.4	978.9	305.2	3.0	914.9	328.7	2.6	849.5	354.8	2.2
	300 HIGH	1170.8	318.2	3.4	1104.0	341.7	3.0	1034.8	367.9	2.6	963.4	396.8	2.3
	350 HIGH	1277.4	354.0	3.3	1200.4	380.6	2.9	1120.9	410.3	2.5	1039.3	443.1	2.2
9	375 HIGH	1418.7	389.7	3.4	1335.4	418.6	3.0	1249.2	450.8	2.6	1160.3	486.4	2.2
	400 HIGH	1560.4	425.6	3.4	1470.4	456.6	3.0	1377.2	491.3	2.6	1280.9	529.6	2.3
	140 HIGH	583.0	150.5	3.6	547.8	162.5	3.1	511.9	175.7	2.7	474.7	190.1	2.3
	155 HIGH	633.2	166.8	3.5	594.9	179.6	3.1	555.9	193.7	2.7	515.4	209.3	2.3
	170 HIGH	683.9	183.3	3.4	642.7	196.8	3.0	600.2	211.9	2.6	556.6	228.6	2.3
	185 HIGH	758.8	201.3	3.5	714.1	216.1	3.1	668.4	232.6	2.7	620.9	250.8	2.3
	200 HIGH	836.1	219.8	3.5	787.9	235.8	3.1	738.0	253.6	2.7	686.7	273.4	2.4
	250 HIGH	985.9	266.5	3.4	927.2	287.0	3.0	866.3	309.6	2.6	758.8	309.7	2.3
	275 HIGH	1104.7	295.4	3.5	1039.7	316.8	3.1	972.5	340.7	2.7	903.6	367.1	2.3
	300 HIGH	1242.2	331.0	3.5	1172.2	355.0	3.1	1099.5	381.7	2.7	1024.2	411.2	2.3
	350 HIGH	1356.8	368.0	3.4	1275.6	395.0	3.0	1191.9	425.0	2.6	1106.1	458.0	2.3
	375 HIGH	1506.6	405.4	3.4	1418.7	434.7	3.0	1328.0	467.4	2.6	1234.5	503.5	2.3
	400 HIGH	1657.1	443.0	3.5	1562.2	474.7	3.1	1464.1	510.0	2.7	1362.4	549.1	2.3

Notes:

1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kW_o/kW_i). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Part Load Performance

Table P-9 - ARI Part-Load Performance for 60 Hz Standard Efficiency Machines in English units

Unit Size	% Load	Tons	EER	IPLV
RTAC	100	140.8	9.7	13.2
140	75	105.5	11.1	
Standard	50	70.4	14.9	
	25	35.2	14.1	
RTAC	100	154.8	9.8	13.5
155	75	116.0	11.4	
Standard	50	77.4	15.3	
	25	38.7	14.8	
RTAC	100	169.1	9.9	13.2
170	75	126.7	11.0	
Standard	50	84.6	15.2	
	25	42.3	13.9	
RTAC	100	184.7	9.7	13.1
185	75	138.5	10.9	
Standard	50	92.3	14.8	
	25	46.2	14.6	
RTAC	100	200.4	9.6	12.9
200	75	150.1	10.9	
Standard	50	100.2	14.6	
	25	50.1	13.6	
RTAC	100	221.1	9.6	13.2
225	75	165.7	11.1	
Standard	50	110.6	15.0	
	25	55.3	14.4	
RTAC	100	242.2	9.6	12.8
250	75	181.5	10.6	
Standard	50	121.1	14.8	
	25	60.5	13.3	
RTAC	100	268.1	9.7	13.3
275	75	202.0	12.3	
Standard	50	134.7	13.8	
	25	67.0	15.3	
RTAC	100	300.4	9.6	13.7
300	75	240.3	12.6	
Standard	50	160.2	14.0	
	25	75.1	16.5	
RTAC	100	340.2	9.6	13.2
350	75	255.8	12.3	
Standard	50	170.5	13.3	
	25	85.3	16.7	
RTAC	100	401.5	9.6	13.7
400	75	306.9	12.1	
Standard	50	204.6	14.5	
	25	102.3	16.8	
RTAC	100	438.5	9.6	14.0
450	75	330.6	12.3	
Standard	50	220.4	14.7	
	25	110.2	17.4	
RTAC	100	479.5	9.6	13.9
500	75	360.2	12.4	
Standard	50	240.2	14.6	
	25	120.1	17.3	

Notes:

1. IPLV values are rated in accordance with ARI Standard 550/590-98.
2. EER and IPLV values include compressors, condenser fans and control kW.

Table P-10 - ARI Part-Load Performance for 60 Hz High Efficiency Machines in English units

Unit Size	% Load	Tons	EER	IPLV
RTAC	100	146.8	10.4	13.6
140	75	110.0	11.5	
High	50	73.4	15.4	
	25	36.7	14.1	
RTAC	100	160.6	10.4	13.9
155	75	120.4	11.7	
High	50	80.3	15.8	
	25	40.2	14.8	
RTAC	100	174.5	10.5	13.7
170	75	130.8	11.4	
High	50	87.3	15.7	
	25	43.6	14.0	
RTAC	100	191.3	10.3	13.5
185	75	143.4	11.3	
High	50	95.7	15.2	
	25	47.8	14.8	
RTAC	100	208.4	10.1	13.3
200	75	156.1	11.3	
High	50	104.2	15.1	
	25	52.1	13.9	
RTAC	100	228.8	10.2	13.6
225	75	171.5	11.5	
High	50	114.4	15.2	
	25	57.2	15.1	
RTAC	100	248.1	10.1	13.0
250	75	186.0	10.9	
High	50	124.1	14.9	
	25	62.0	13.3	
RTAC	100	279.1	10.4	13.8
275	75	210.3	12.9	
High	50	140.2	14.1	
	25	69.8	16.2	
RTAC	100	309.8	10.0	13.8
300	75	243.8	12.8	
High	50	162.6	14.0	
	25	77.4	17.1	
RTAC	100	346.2	10.4	14.5
350	75	260.9	12.9	
High	50	174.0	15.5	
	25	87.0	17.1	
RTAC	100	413.3	10.0	13.9
400	75	313.0	12.4	
High	50	208.7	14.8	
	25	104.4	16.2	

Performance Data

Part Load Performance

Table P-11 - ARI Part-Load Performance for 50 Hz Standard Efficiency Machines in English units

Unit Size	% Load	Tons	EER	IPLV
RTAC 140	100	137.6	9.4	13.4
Standard	75	103.2	10.7	
	50	68.8	15.4	
	25	34.4	15.8	
RTAC 155	100	150.5	9.3	13.5
Standard	75	112.9	10.8	
	50	75.3	15.3	
	25	37.6	16.5	
RTAC 170	100	163.3	9.2	13.3
Standard	75	122.6	10.9	
	50	81.8	15.0	
	25	40.9	15.4	
RTAC 185	100	181.3	9.4	13.8
Standard	75	135.9	11.2	
	50	90.7	15.7	
	25	45.3	16.1	
RTAC 200	100	199.3	9.5	13.2
Standard	75	149.5	10.5	
	50	99.7	15.3	
	25	49.8	15.0	
RTAC 250	100	234.8	9.4	15.1
Standard	75	174.6	12.6	
	50	116.4	16.0	
	25	58.2	20.7	
RTAC 275	100	262.7	9.3	14.4
Standard	75	195.5	12.5	
	50	130.3	15.6	
	25	65.7	17.1	
RTAC 300	100	298.6	9.5	13.8
Standard	75	221.7	12.7	
	50	147.8	13.8	
	25	74.7	18.2	
RTAC 350	100	324.0	9.2	14.3
Standard	75	242.8	12.4	
	50	161.9	14.9	
	25	81.0	19.4	
RTAC 375	100	358.4	9.3	14.7
Standard	75	267.4	12.5	
	50	178.3	15.4	
	25	89.2	20.1	
RTAC 400	100	395.5	9.4	14.6
Standard	75	294.1	12.7	
	50	196.1	15.1	
	25	98.1	19.9	

Table P-12 - ARI Part-Load Performance for 50 Hz High Efficiency Machines in English units

Unit Size	% Load	Tons	EER	IPLV
RTAC 140	100	144.7	10.3	14.1
High	75	108.5	11.4	
	50	72.3	16.2	
	25	36.2	16.2	
RTAC 155	100	157.4	10.1	14.1
High	75	118.1	11.4	
	50	78.7	16.1	
	25	39.3	17.0	
RTAC 170	100	170.2	10.0	13.9
High	75	127.6	11.5	
	50	85.1	15.8	
	25	42.5	15.8	
RTAC 185	100	189.2	10.1	14.4
High	75	141.9	11.8	
	50	94.6	16.4	
	25	47.3	16.6	
RTAC 200	100	208.7	10.3	13.8
High	75	156.5	11.0	
	50	104.3	16.0	
	25	52.2	15.6	
RTAC 250	100	245.5	9.9	15.6
High	75	182.6	13.1	
	50	121.8	16.8	
	25	60.9	20.1	
RTAC 275	100	275.5	10.1	15.2
High	75	205.0	13.3	
	50	136.7	16.3	
	25	68.9	18.3	
RTAC 300	100	310.8	10.2	14.4
High	75	230.8	13.4	
	50	153.9	14.1	
	25	77.7	19.4	
RTAC 350	100	337.9	9.9	14.9
High	75	253.3	13.1	
	50	168.9	15.6	
	25	84.5	19.1	
RTAC 375	100	375.9	10.0	15.2
High	75	280.6	13.2	
	50	187.1	16.1	
	25	93.6	19.7	
RTAC 400	100	413.9	10.1	15.1
High	75	307.8	13.3	
	50	205.3	15.8	
	25	102.6	19.6	

- Notes:
1. IPLV values are rated in accordance with ARI Standard 550/590-98.
 2. EER and IPLV values include compressors, condenser fans and control kW.



Electrical Data

Table E-1 — Unit Electrical Data for Standard Efficiency at All Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring				Motor Data						
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	Compressor (Each) RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Fans (Each) Qty. Ckt 1/Ckt 2	kW	FLA	Control kW (7)
RTAC 140	200/60/3	1	660	800	800	2	270-270	NA	487-487	8	1.5	6.5	0.83
	200/60/3	2	364/364	600/600	450/450	2	270/270	NA	487/487	4/4	1.5	6.5	0.83
	230/60/3	1	581	800	700	2	235-235	NA	427-427	8	1.5	6.5	0.83
	230/60/3	2	320/320	500/500	400/400	2	235/235	NA	427/427	4/4	1.5	6.5	0.83
	380/60/3	1	348	450	400	2	142-142	801-801	260-260	8	1.5	3.5	0.83
	380/60/3	2	192/192	300/300	250/250	2	142/142	801/801	260/260	4/4	1.5	3.5	0.83
	460/60/3	1	290	400	350	2	118-118	652-652	212-212	8	1.5	3.0	0.83
	460/60/3	2	160/160	250/250	200/200	2	118/118	652/652	212/212	4/4	1.5	3.0	0.83
	575/60/3	1	232	300	300	2	94-94	520-520	172-172	8	1.5	2.5	0.83
	575/60/3	2	128/128	200/200	175/175	2	94/94	520/520	172/172	4/4	1.5	2.5	0.83
	400/50/3	1	333	450	400	2	138-138	774-774	259-259	8	1.5	2.8	0.83
	400/50/3	2	184/184	300/300	250/250	2	138/138	774/774	259/259	4/4	1.5	2.8	0.83
RTAC 155	200/60/3	1	730	1000	1000	2	320-270	NA	600-701	9	1.5	6.5	0.83
	200/60/3	2	433/364	700/600	600/450	2	320/270	NA	600/701	5/4	1.5	6.5	0.83
	230/60/3	1	641	800	800	2	278-235	NA	506-571	9	1.5	6.5	0.83
	230/60/3	2	380/320	600/500	450/400	2	278/235	NA	506/571	5/4	1.5	6.5	0.83
	380/60/3	1	380	500	450	2	168-142	973-801	316-260	9	1.5	3.5	0.83
	380/60/3	2	228/192	350/300	300/250	2	168/142	973/801	316/260	5/4	1.5	3.5	0.83
	460/60/3	1	319	450	400	2	139-118	774-652	252-212	9	1.5	3.0	0.83
	460/60/3	2	189/160	300/250	225/200	2	139/118	774/652	252/212	5/4	1.5	3.0	0.83
	575/60/3	1	255	350	300	2	111-94	631-528	205-172	9	1.5	2.5	0.83
	575/60/3	2	152/128	250/200	200/175	2	111/94	631/528	205/172	5/4	1.5	2.5	0.83
	400/50/3	1	373	500	450	2	168-138	896-796	291-259	9	1.5	2.8	0.83
	400/50/3	2	224/184	350/300	300/250	2	168/138	896/796	291/259	5/4	1.5	2.8	0.83
RTAC 170	200/60/3	1	785	1000	1000	2	320-320	NA	600-600	10	1.5	6.5	0.83
	200/60/3	2	433/433	700/700	600/600	2	320/320	NA	600/600	5/5	1.5	6.5	0.83
	230/60/3	1	691	800	800	2	278-278	NA	506-506	10	1.5	6.5	0.83
	230/60/3	2	380/380	600/600	450/450	2	278/278	NA	506/506	5/5	1.5	6.5	0.83
	380/60/3	1	413	500	500	2	168-168	973-973	316-316	10	1.5	3.5	0.83
	380/60/3	2	228/228	350/350	300/300	2	168/168	973/973	316/316	5/5	1.5	3.5	0.83
	460/60/3	1	343	450	400	2	139-139	774-774	252-252	10	1.5	3.0	0.83
	460/60/3	2	189/189	300/300	225/225	2	139/139	774/774	252/252	5/5	1.5	3.0	0.83
	575/60/3	1	275	350	350	2	111-111	631-631	205-205	10	1.5	2.5	0.83
	575/60/3	2	152/152	250/250	200/200	2	111/111	631/631	205/205	5/5	1.5	2.5	0.83
	400/50/3	1	406	500	450	2	168-168	896-896	291-291	10	1.5	2.8	0.83
	400/50/3	2	224/224	350/350	300/300	2	168/168	896/896	291/291	5/5	1.5	2.8	0.83

Electrical Data

Table E-1 (Continued) — Unit Electrical Data for Std Efficiency at All Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring				Motor Data						
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Fans (Each) Qty. Ckt 1/Ckt 2	kW	FLA	Control kW (7)
RTAC 185	200/60/3	1	874	1200	1000	2	386-320	NA	701-600	11	1.5	6.5	0.83
	200/60/3	2	522/433	800/700	700/600	2	386/320	NA	701/600	6/5	1.5	6.5	0.83
	230/60/3	1	770	1000	1000	2	336-278	NA	571-506	11	1.5	6.5	0.83
	230/60/3	2	459/380	700/600	600/450	2	336/278	NA	571/506	6/5	1.5	6.5	0.83
	380/60/3	1	460	600	600	2	203-168	1060-973	345-316	11	1.5	3.5	0.83
	380/60/3	2	275/228	450/350	350/300	2	203/168	1060/973	345/316	6/5	1.5	3.5	0.83
	460/60/3	1	382	500	450	2	168-139	878-774	285-252	11	1.5	3.0	0.83
	460/60/3	2	228/189	350/300	300/225	2	168/139	878/774	285/252	6/5	1.5	3.0	0.83
	575/60/3	1	306	400	350	2	134-111	705-631	229-205	11	1.5	2.5	0.83
	575/60/3	2	183/152	300/250	225/200	2	134/111	705/631	229/205	6/5	1.5	2.5	0.83
	400/50/3	1	446	600	500	2	198-168	1089-896	354-291	11	1.5	2.8	0.83
	400/50/3	2	264/224	450/350	350/300	2	198/168	1089/896	354/291	6/5	1.5	2.8	0.83
RTAC 200	200/60/3	1	947	1200	1200	2	386-386	NA	701-701	12	1.5	6.5	0.83
	200/60/3	2	522/522	800/800	700/700	2	386/386	NA	701/701	6/6	1.5	6.5	0.83
	230/60/3	1	834	1000	1000	2	336-336	NA	571-571	12	1.5	6.5	0.83
	230/60/3	2	459/459	700/700	600/600	2	336/336	NA	571/571	6/6	1.5	6.5	0.83
	380/60/3	1	499	700	600	2	203-203	1060-1060	345-345	12	1.5	3.5	0.83
	380/60/3	2	275/275	450/450	350/350	2	203/203	1060/1060	345/345	6/6	1.5	3.5	0.83
	460/60/3	1	414	500	500	2	168-168	878-878	285-285	12	1.5	3.0	0.83
	460/60/3	2	228/228	350/350	300/300	2	168/168	878/878	285/285	6/6	1.5	3.0	0.83
	575/60/3	1	332	450	400	2	134-134	705-705	229-229	12	1.5	2.5	0.83
	575/60/3	2	183/183	300/300	225/225	2	134/134	705/705	229/229	6/6	1.5	2.5	0.83
	400/50/3	1	479	600	600	2	198-198	1089-1089	354-354	12	1.5	2.8	0.83
	400/50/3	2	264/264	450/450	350/350	2	198/198	1089/1089	354/354	6/6	1.5	2.8	0.83
RTAC 225	200/60/3	1	1045	1200	1200	2	459-386	NA	821-701	13	1.5	6.5	0.83
	200/60/3	2	620/522	1000/800	800/700	2	459/386	NA	821/701	7/6	1.5	6.5	0.83
	230/60/3	1	920	1200	1200	2	399-336	NA	691-571	13	1.5	6.5	0.83
	230/60/3	2	545/459	800/700	700/600	2	399/336	NA	691/571	7/6	1.5	6.5	0.83
	380/60/3	1	551	700	700	2	242-203	1306-1060	424-345	13	1.5	3.5	0.83
	380/60/3	2	327/275	500/450	400/350	2	242/203	1306/1060	424/345	7/6	1.5	3.5	0.83
	460/60/3	1	457	600	600	2	200-168	1065-878	346-285	13	1.5	3.0	0.83
	460/60/3	2	271/228	450/350	350/300	2	200/168	1065/878	346/285	7/6	1.5	3.0	0.83
	575/60/3	1	367	500	450	2	160-134	853-705	277-229	13	1.5	2.5	0.83
	575/60/3	2	218/183	350/300	300/225	2	160/134	853/705	277/229	7/6	1.5	2.5	0.83
	200/60/3	1	1124	1200	1200	2	459-459	NA	821-821	14	1.5	6.5	0.83
	200/60/3	2	620/620	1000/1000	800/800	2	459/459	NA	821/821	7/7	1.5	6.5	0.83
RTAC 250	230/60/3	1	989	1200	1200	2	399-399	NA	691-691	14	1.5	6.5	0.83
	230/60/3	2	545/545	800/800	700/700	2	399/399	NA	691/691	7/7	1.5	6.5	0.83
	380/60/3	1	594	800	700	2	242-242	1306-1306	424-424	14	1.5	3.5	0.83
	380/60/3	2	327/327	500/500	400/400	2	242/242	1306/1306	424/424	7/7	1.5	3.5	0.83
	460/60/3	1	492	600	600	2	200-200	1065-1065	346-346	14	1.5	3.0	0.83
	460/60/3	2	271/271	450/450	350/350	2	200/200	1065/1065	346/346	7/7	1.5	3.0	0.83
	575/60/3	1	395	500	500	2	160-160	853-853	277-277	14	1.5	2.5	0.83
	575/60/3	2	218/218	350/350	300/300	2	160/160	853/853	277/277	7/7	1.5	2.5	0.83
	400/50/3	1	563	700	700	3	138-138-198	796-796-1089	259-259-354	14	1.5	2.8	1.2
	400/50/3	2	333/265	450/450	400/350	3	138-138/198	796-796/1089	259-259/354	8/6	1.5	2.8	1.2



Electrical Data

Table E-1 (Continued) — Unit Electrical Data for Std Efficiency at All Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Unit Wiring		Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Motor Data		Fans (Each) Qty. Ckt 1/Ckt 2 kW	FLA	Control kW (7)
				Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2				Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2			
RTAC 275	200/60/3	1	NA										
	200/60/3	2	785/522	1000/800	1000/700	3	320-320/386	NA	600-600/701	10/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	681/459	800/700	800/600	3	278-278/336	NA	506-506/571	10/6	1.5	6.5	1.2
	380/60/3	1	NA										
	380/60/3	2	413/275	500/450	500/350	3	168-168/203	973-973/1060	316-316/345	10/6	1.5	3.5	1.2
	460/60/3	1	536	700	600	3	139-139-168	774-774-878	252-252-285	16	1.5	3.0	1.2
	460/60/3	2	343/228	450/350	400/300	3	139-139/168	774-774/878	252-252/285	10/6	1.5	3.0	1.2
	575/60/3	1	430	500	500	3	111-111-134	631-631-705	205-205-229	16	1.5	2.5	1.2
	575/60/3	2	275/183	350/300	350/225	3	111-111/134	631-631/705	205-205/229	10/6	1.5	2.5	1.2
RTAC 300	400/50/3	1	629	800	700	3	168-168-198	896-896-1089	291-291-354	16	1.5	2.8	1.2
	400/50/3	2	406/265	500/450	450/350	3	168-168/198	896-896/1089	291-291/254	10/6	1.5	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	947/522	1200/800	1200/700	3	386-386/386	NA	701-701/701	12/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	834/459	1000/700	1000/600	3	336-336/336	NA	571-571/571	12/6	1.5	6.5	1.2
	380/60/3	1	NA										
	380/60/3	2	499/275	700/450	600/350	3	203-203/203	1060-1060/1060	345-345/345	12/6	1.5	3.5	1.2
	460/60/3	1	600	700	700	3	168-168-168	878-878-878	285-285-285	18	1.5	3.0	1.2
	460/60/3	2	414/228	500/350	500/300	3	168-168/168	878-878/878	285-285/285	12/6	1.5	3.0	1.2
RTAC 350	575/60/3	1	481	600	600	3	134-134-134	705-705-705	229-229-229	18	1.5	2.5	1.2
	575/60/3	2	332/183	450/300	400/225	3	134-134/134	705-705/705	229-229/229	12/6	1.5	2.5	1.2
	400/50/3	1	694	800	800	3	198-198-198	1089-1089-1089	354-354-354	18	1.5	2.8	1.2
	400/50/3	2	480/265	600/450	600/350	3	198-198/198	1089-1089/1089	354-354/354	12/6	1.5	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	1124/522	1200/800	1200/700	3	459-459/386	NA	821-821/701	14/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	989/459	1200/700	1200/600	3	399-399/336	NA	691-691/571	14/6	1.5	6.5	1.2
	380/60/3	1	NA										
	380/60/3	2	594/275	800/450	700/350	3	242-242/203	973-973/973	424-424/345	14/6	1.5	3.5	1.2
RTAC 375	460/60/3	1	678	800	800	3	200-200-168	1065-1065-878	346-346-285	20	1.5	3.0	1.2
	460/60/3	2	492/228	600/350	600/300	3	200-200/168	1065-1065/878	346-346/285	14/6	1.5	3.0	1.2
	575/60/3	1	544	700	600	3	160-160-134	631-631-631	277-277-229	20	1.5	2.5	1.2
	575/60/3	2	395/183	500/300	450/225	3	160-160/134	631-631/631	277-277/229	14/6	1.5	2.5	1.2
	400/50/3	1	770	800	800	4	168-168-168-168	896-896-896-896	291-291-291-291	20	1.5	2.8	1.59
	400/50/3	2	406/406	500/500	450/450	4	168-168/168-168	896/896/896/896	291-291/291-291	10/10	1.5	2.8	1.59
	400/50/3	1	844	1000	1000	4	198-198-168-168	1089-1089-896-896	354-354-291-291	22	1.5	2.8	1.59
	400/50/3	2	480/406	600/500	600/450	4	198-198/168-168	1089-1089/896-896	354-354/291-291	12/10	1.5	2.8	1.59
	200/60/3	1	NA										
	200/60/3	2	947/947	1200/1200	1200/1200	4	386-386/386-386	NA	701-701/701-701	12/12	1.5	6.5	1.59
RTAC 400	230/60/3	1	NA										
	230/60/3	2	834/834	1000/1000	1000/1000	4	336-336/336-336	NA	571-571/571-571	12/12	1.5	6.5	1.59
	380/60/3	1	NA										
	380/60/3	2	499/499	700/700	600/600	4	203-203/203-203	1060-1060/1060-1060	345-345/345-345	12/12	1.5	3.5	1.59
	460/60/3	1	786	800	800	4	168-168-168-168	878-878-878-878	285-285-285-285	24	1.5	3.0	1.59
	460/60/3	2	414/414	500/500	500/500	4	168-168/168-168	878-878/878-878	285-285/285-285	12/12	1.5	3.0	1.59
	575/60/3	1	630	700	700	4	134-134-134-134	705-705-705-705	229-229-229-229	24	1.5	2.5	1.59
	575/60/3	2	332/332	450/450	400/400	4	134-134/134-134	705-705/705-705	229-229/229-229	12/12	1.5	2.5	1.59
	400/50/3	1	909	1000	1000	4	198-198-198-198	1089-1089-1089-1089	354-354-354-354	24	1.5	2.8	1.59
	400/50/3	2	480/480	600/600	600/600	4	198-198/198-198	1089-1089/1089-1089	354-354/354-354	12/12	1.5	2.8	1.59

Electrical Data

Table E-1 (Continued) — Unit Electrical Data for Std Efficiency at All Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring			Motor Data							
			MCA (3)	Max. Fuse, HACR Breaker or MOP (11)	Rec. Time Delay or RDE (4)	Qty	RLA (5)	Compressor (Each) XLRA (8)	YLRA (8)	Fans (Each) Qty.	kW	FLA	Control kW (7)
			Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2		Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2			
RTAC 450	200/60/3	1	NA										
	200/60/3	2	1124/947	1200/1200	1200/1200	4	459-459/386-386	NA	821-821/701-701	14/12	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	989/834	1200/1000	1200/1000	4	399-399/336-336	NA	691-691/571-571	14/12	1.5	6.5	1.59
	380/60/3	1	NA										
	380/60/3	2	594/499	800/700	700/600	4	242-242/203-203	1306-1306/1060-1060	424-424/345-345	14/12	1.5	3.5	1.59
	460/60/3	1	864	1000	1000	4	200-200-168-168	1065-1065-878-878	346-346-285-285	26	1.5	3.0	1.59
	460/60/3	2	492/414	600/500	600/500	4	200-200/168-168	1065-1065/878-878	346-346/285-285	14/12	1.5	3.0	1.59
RTAC 500	575/60/3	1	693	800	800	4	160-160-134-134	853-853-705-705	277-277-229-229	26	1.5	2.5	1.59
	575/60/3	2	395/332	500/450	450/400	4	160-160/134-134	853-853/705-705	277-277/229-229	14/12	1.5	2.5	1.59
	200/60/3	1	NA										
	200/60/3	2	1124/1124	1200/1200	1200/1200	4	459-459/459-459	NA	821-821/821-821	14/14	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	989/989	1200/1200	1200/1200	4	399-399/399-399	NA	691-691/691-691	14/14	1.5	6.5	1.59
	380/60/3	1	NA										
	380/60/3	2	594/594	800/800	700/700	4	242-242/242-242	1306-1306/1306-1306	424-424/424-424	14/14	1.5	3.5	1.59
RTAC 500	460/60/3	1	934	1000	1000	4	200-200-200-200	1065-1065-1065-1065	346-346-346-346	28	1.5	3.0	1.59
	460/60/3	2	492/492	600/600	600/600	4	200-200/200-200	1065-1065/1065-1065	346-346/346-346	14/14	1.5	3.0	1.59
	575/60/3	1	750	800	800	4	160-160-160-160	853-853-853-853	277-277-277-277	28	1.5	2.5	1.59
	575/60/3	2	395/395	500/500	450/450	4	160-160/160-160	853-853/853-853	277-277/277-277	14/14	1.5	2.5	1.59

Notes:

- As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
- Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit.
- MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
- RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
- RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
- Local codes may take precedence.
- Control kW includes operational controls only. Does not include evaporator heaters.
- XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
- VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440
- A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
- If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
- When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.

Electrical Data

Table E-2 — Unit Electrical Data for High Efficiency at Std. Ambient Operation

Unit Wiring								Motor Data						
Unit Size	Rated Voltage	# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4)		RLA (5) Ckt 1/Ckt 2	Compressor (Each)		Fans (Each)		Control kW (7)		
					Qty			XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW FLA			
RTAC 140	200/60/3	1	648	800	800	2	259-259	NA	487-487	10	1.5 6.5	0.83		
	200/60/3	2	356/356	600/600	450/450	2	259/259	NA	487/487	5/5	1.5 6.5	0.83		
	230/60/3	1	572	700	700	2	225-225	NA	427-427	10	1.5 6.5	0.83		
	230/60/3	2	314/314	500/500	400/400	2	225/225	NA	427/427	5/5	1.5 6.5	0.83		
	380/60/3	1	341	450	400	2	136-136	801-801	260-260	10	1.5 3.5	0.83		
	380/60/3	2	188/188	300/300	225/225	2	136/136	801/801	260/260	5/5	1.5 3.5	0.83		
	460/60/3	1	285	350	350	2	113-113	652-652	212-212	10	1.5 3.0	0.83		
	460/60/3	2	157/157	250/250	200/200	2	113/113	652/652	212/212	5/5	1.5 3.0	0.83		
	575/60/3	1	228	300	300	2	90-90	520-520	172-172	10	1.5 2.5	0.83		
	575/60/3	2	125/125	200/200	150/150	2	90/90	520/520	172/172	5/5	1.5 2.5	0.83		
	400/50/3	1	325	450	400	2	132-132	774-774	259-259	10	1.5 2.8	0.83		
	400/50/3	2	179/179	300/300	225/225	2	132/132	774/774	259/259	5/5	1.5 2.8	0.83		
RTAC 155	200/60/3	1	712	1000	800	2	305-259	NA	600-487	11	1.5 6.5	0.83		
	200/60/3	2	421/356	700/600	500/450	2	305/259	NA	600/487	6/5	1.5 6.5	0.83		
	230/60/3	1	628	800	700	2	265-225	NA	506-427	11	1.5 6.5	0.83		
	230/60/3	2	371/314	600/500	450/400	2	265/225	NA	506/427	6/5	1.5 6.5	0.83		
	380/60/3	1	376	500	416	2	161-136	973-801	316-260	11	1.5 3.5	0.83		
	380/60/3	2	222/188	350/300	300/225	2	161/136	973/801	316/260	6/5	1.5 3.5	0.83		
	460/60/3	1	313	400	350	2	133-113	774-652	252-212	11	1.5 3.0	0.83		
	460/60/3	2	185/157	300/250	225/200	2	133/113	774/652	252/212	6/5	1.5 3.0	0.83		
	575/60/3	1	250	350	300	2	106-90	631-528	205-172	11	1.5 2.5	0.83		
	575/60/3	2	148/125	250/200	175/150	2	106/90	631/528	205/172	6/5	1.5 2.5	0.83		
	400/50/3	1	363	500	450	2	160-132	896-796	291-259	11	1.5 2.8	0.83		
	400/50/3	2	217/179	350/300	300/225	2	160/132	896/796	291/259	6/5	1.5 2.8	0.83		
RTAC 170	200/60/3	1	765	1000	1000	2	305-305	NA	600-600	12	1.5 6.5	0.83		
	200/60/3	2	421/421	700/700	500/500	2	305/305	NA	600/600	6/6	1.5 6.5	0.83		
	230/60/3	1	675	800	800	2	265-265	NA	506-506	12	1.5 6.5	0.83		
	230/60/3	2	371/371	600/600	450/450	2	265/265	NA	506/506	6/6	1.5 6.5	0.83		
	380/60/3	1	404	500	450	2	161-161	973-973	316-316	12	1.5 3.5	0.83		
	380/60/3	2	222/222	350/350	300/300	2	161/161	973/973	316/316	6/6	1.5 3.5	0.83		
	460/60/3	1	336	450	400	2	133-133	774-774	252-252	12	1.5 3.0	0.83		
	460/60/3	2	185/185	300/300	225/225	2	133/133	774/774	252/252	6/6	1.5 3.0	0.83		
	575/60/3	1	269	350	300	2	106-106	631-631	205-205	12	1.5 2.5	0.83		
	575/60/3	2	148/148	250/250	175/175	2	106/106	631/631	205/205	6/6	1.5 2.5	0.83		
	400/50/3	1	394	500	450	2	160-160	896-896	291-291	12	1.5 2.8	0.83		
	400/50/3	2	217/217	350/350	300/300	2	160/160	896/896	291/291	6/6	1.5 2.8	0.83		

Electrical Data

Table E-2 (Continued) — Unit Electrical Data for High Efficiency at Std. Ambient Operation

Unit Wiring										Motor Data					
Unit Size	Rated Voltage	# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4)		Compressor (Each)		Fans (Each)						
					Ckt 1/Ckt 2	Qty	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW	FLA	Control kW (7)			
RTAC 185	200/60/3	1	856	1200	1000	2	373-305	NA	701-600	13	1.5	6.5	0.83		
	200/60/3	2	512/421	800/700	700/500	2	373/305	NA	701/600	7/6	1.5	6.5	0.83		
	230/60/3	1	755	1000	1000	2	324-265	NA	571-506	13	1.5	6.5	0.83		
	230/60/3	2	451/371	700/600	600/450	2	324/265	NA	571/506	7/6	1.5	6.5	0.83		
	380/60/3	1	452	600	500	2	196-161	1060-973	345-316	13	1.5	3.5	0.83		
	380/60/3	2	270/222	450/350	350/300	2	196/161	1060/973	345/316	7/6	1.5	3.5	0.83		
	460/60/3	1	375	500	450	2	162-133	878-774	285-252	13	1.5	3.0	0.83		
	460/60/3	2	224/185	350/300	300/225	2	162/133	878/774	285/252	7/6	1.5	3.0	0.83		
	575/60/3	1	301	400	350	2	130-106	705-631	229-205	13	1.5	2.5	0.83		
	575/60/3	2	180/148	300/250	225/175	2	130/106	705/631	229/205	7/6	1.5	2.5	0.83		
RTAC 200	400/50/3	1	433	600	500	2	189-160	1089-896	354-291	13	1.5	2.8	0.83		
	400/50/3	2	256/217	400/350	350/300	2	189/160	1089/896	354/291	7/6	1.5	2.8	0.83		
	200/60/3	1	931	1200	1200	2	373-373	NA	701-701	14	1.5	6.5	0.83		
	200/60/3	2	512/512	800/800	700/700	2	373/373	NA	701/701	7/7	1.5	6.5	0.83		
	230/60/3	1	820	1000	1000	2	324-324	NA	571-571	14	1.5	6.5	0.83		
	230/60/3	2	451/451	700/700	600/600	2	324/324	NA	571/571	7/7	1.5	6.5	0.83		
	380/60/3	1	490	600	600	2	196-196	1060-1060	345-345	14	1.5	3.5	0.83		
	380/60/3	2	270/270	450/450	350/350	2	196/196	1060/1060	345/345	7/7	1.5	3.5	0.83		
	460/60/3	1	407	500	450	2	162-162	878-878	285-285	14	1.5	3.0	0.83		
	460/60/3	2	224/224	350/350	300/300	2	162/162	878/878	285/285	7/7	1.5	3.0	0.83		
RTAC 225	575/60/3	1	328	450	400	2	130-130	705-705	229-229	14	1.5	2.5	0.83		
	575/60/3	2	180/180	300/300	225/225	2	130/130	705/705	229/229	7/7	1.5	2.5	0.83		
	400/50/3	1	464	600	600	2	189-189	1089-1089	354-354	14	1.5	2.8	0.83		
	400/50/3	2	256/256	400/400	350/350	2	189/189	1089/1089	354/354	7/7	1.5	2.8	0.83		
	200/60/3	1	1023	1200	1200	2	447-373	NA	821-701	14	1.5	6.5	0.83		
	200/60/3	2	611/506	1000/800	800/600	2	447/373	NA	821/701	8/6	1.5	6.5	0.83		
	230/60/3	1	900	1200	1000	2	388-224	NA	691-571	14	1.5	6.5	0.83		
	230/60/3	2	537/544	800/700	700/600	2	388/324	NA	691/571	8/6	1.5	6.5	0.83		
	380/60/3	1	539	700	600	2	235-196	1306-1060	424-345	14	1.5	3.5	0.83		
	380/60/3	2	322/266	500/450	400/350	2	235/196	1306/1060	424/345	8/6	1.5	3.5	0.83		
RTAC 225	460/60/3	1	447	600	500	2	194-162	1065-878	346-285	14	1.5	3.0	0.83		
	460/60/3	2	267/221	450/350	350/300	2	194/162	1065/878	346/285	8/6	1.5	3.0	0.83		
	575/60/3	1	359	500	400	2	155-130	853-705	277-229	14	1.5	2.5	0.83		
	575/60/3	2	214/178	350/300	300/225	2	155/130	853/705	277/229	8/6	1.5	2.5	0.83		



Electrical Data

Table E-2 (Continued) — Unit Electrical Data for High Efficiency at Std. Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring		Rec. Time		Compressor (Each)		Fans (Each)		Control kW (7)
			MCA (3)	Max. Fuse, HACR Breaker or MOP (11)	Delay or RDE (4)	Qty	RLA (5)	XLRA (8)	YLRA (8)	Qty.	
			Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2		Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW FLA
RTAC 250	200/60/3	1	1110	1200	1200	2	447-447	NA	821-821	16	1.5 6.5 0.83
	200/60/3	2	611/611	1000/1000	800/800	2	447/447	NA	821/821	8/8	1.5 6.5 0.83
	230/60/3	1	977	1200	1200	2	388-388	NA	691-691	16	1.5 6.5 0.83
	230/60/3	2	537/537	800/800	700/700	2	388/388	NA	691/691	8/8	1.5 6.5 0.83
	380/60/3	1	585	800	700	2	235-235	1306-1306	424-424	16	1.5 3.5 0.83
	380/60/3	2	322/322	500/500	400/400	2	235/235	1306/1306	424/424	8/8	1.5 3.5 0.83
	460/60/3	1	485	600	600	2	194-194	1065-1065	346-346	16	1.5 3.0 0.83
	460/60/3	2	267/267	450/450	350/350	2	194/194	1065/1065	346/346	8/8	1.5 3.0 0.83
	575/60/3	1	389	500	450	2	155-155	853-853	277-277	794	1.5 2.5 0.83
	575/60/3	2	214/214	350/350	300/300	2	155/155	853/853	277/277	8/8	1.5 2.5 0.83
	400/50/3	1	546	700	600	3	132-132-189	796-796-1089	259-259-354	16	1.5 2.8 0.75
	400/50/3	2	325/254	450/400	400/350	3	132-132/189	796-796/1089	259-259/354	10/6	1.5 2.8 0.75
RTAC 275	200/60/3	1	NA								
	200/60/3	2	765/506	1000/800	1000/600	3	305-305/373	NA	600-600/701	12/6	1.5 6.5 1.2
	230/60/3	1	NA								
	230/60/3	2	675/444	800/700	800/600	3	265-265/324	NA	506-506/571	12/6	1.5 6.5 1.2
	380/60/3	1	NA								
	380/60/3	2	405/266	500/450	450/350	3	161-161/196	973-973/1060	316-316/345	12/6	1.5 3.5 1.2
	460/60/3	1	523	600	600	3	133-133-162	774-774-878	252-252-285	18	1.5 3.0 1.2
	460/60/3	2	336/221	450/350	400/300	3	133-133/162	774-774/878	252-252/285	12/6	1.5 3.0 1.2
	575/60/3	1	420	500	500	3	106-106-130	631-631-705	205-205-229	18	1.5 2.5 1.2
	575/60/3	2	269/178	350/300	300/225	3	106-106/130	631-631/705	205-205/229	12/6	1.5 2.5 1.2
	400/50/3	1	607	700	700	3	160-160-189	896-896-1089	291-291-354	18	1.5 2.8 1.2
	400/50/3	2	394/254	500/400	450/350	3	160-160/189	896-896/1089	291-291/254	12/6	1.5 2.8 1.2
RTAC 300	200/60/3	1	NA								
	200/60/3	2	931/506	1200/800	1200/600	3	373-373/373	NA	701-701/701	14/6	1.5 6.5 1.2
	230/60/3	1	NA								
	230/60/3	2	820/444	1000/700	1000/600	3	324-324/324	NA	571-571/571	14/6	1.5 6.5 1.2
	380/60/3	1	NA								
	380/60/3	2	490/266	600/450	600/350	3	196-196/196	1060-1060/1060	345-345/345	14/6	1.5 3.5 1.2
	460/60/3	1	587	700	700	3	162-162 - 162	878-878-878	285-285-285	20	1.5 3.0 1.2
	460/60/3	2	407/221	500/350	450/300	3	162-162/162	878-878/878	285-285/285	14/6	1.5 3.0 1.2
	575/60/3	1	473	600	500	3	130-130-130	705-705-705	229-229-229	20	1.5 2.5 1.2
	575/60/3	2	328/178	450/300	400/225	3	130-130/130	705-705/705	229-229/229	14/6	1.5 2.5 1.2
	400/50/3	1	671	800	800	3	189-189-189	1089-1089-1089	354-354-354	20	1.5 2.8 1.2
	400/50/3	2	465/254	600/400	600/350	3	189-189/189	1089-1089/1089	354-354/354	14/6	1.5 2.8 1.2
RTAC 350	200/60/3	1	NA								
	200/60/3	2	765/765	1000/1000	1000/1000	4	305-305/305-305	NA	600-600/600-600	12/12	1.5 6.5 1.2
	230/60/3	1	NA								
	230/60/3	2	675/675	800/800	800/800	4	265-265/265-265	NA	506-506/506-506	12/12	1.5 6.5 1.2
	380/60/3	1	NA								
	380/60/3	2	405/405	500/500	450/450	4	161-161/161-161	973-973/973-973	316-316/316-316	12/12	1.5 3.5 1.2
	460/60/3	1	638	700	700	4	133-133-133-133	774-774-774-774	252-252-252-252	24	1.5 3.0 1.2
	460/60/3	2	336/336	450/450	400/400	4	133-133/133-133	774-774/774-774	252-252/252-252	12/12	1.5 3.0 1.2
	575/60/3	1	511	600	600	4	106-106-106-106	631-631-631-631	205-205-205-205	24	1.5 2.5 1.2
	575/60/3	2	269/269	350/350	300/300	4	106-106/106-106	631-631/631-631	205-205/205-205	12/12	1.5 2.5 1.2
	400/50/3	1	748	800	800	4	160-160-160-160	896-896-896-896	291-291-291-291	24	1.5 2.8 1.59
	400/50/3	2	394/394	500/500	450/450	4	160-160/160-160	896-896/896-896	291-291/291-291	12/12	1.5 2.8 1.59

Electrical Data

Table E-2 (Continued) — Unit Electrical Data for High Efficiency at Std. Ambient Operation

Unit Wiring															Motor Data						
Unit Size	Rated Voltage	# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4)		Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each)		Fans (Each)			Control kW (7)							
					Ckt 1/Ckt 2	Ckt 1/Ckt 2			XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW	FLA								
RTAC 375	400/50/3	1	819	1000	1000	4	189-189-160-160	1089-1089-896-896	354-354-291-291	26	1.5	2.8	1.59								
	400/50/3	2	465/394	600/500	600/450	4	189-189/160-160	1089-1089/896-896	254-254/291-291	14/12	1.5	2.8	1.59								
	200/60/3	1	NA																		
	200/60/3	2	931/931	1200/1200	1200/1200	4	373-373/373-373	NA	701-701/701-701	14/14	1.5	6.5	1.59								
	230/60/3	1	NA																		
	230/60/3	2	820/820	1000/1000	1000/1000	4	324-324/324-324	NA	571-571/571-571	14/14	1.5	6.5	1.59								
RTAC 400	380/60/3	1	NA																		
	380/60/3	2	490/490	600/600	600/600	4	196-196/196-196	1060-1060/1060-1060	345-345/345-345	14/14	1.5	3.5	1.59								
	460/60/3	1	773	800	800	4	162-162-162-162	878-878-878-878	285-285-285-285	28	1.5	3.0	1.59								
	460/60/3	2	407/407	500/500	450/450	4	162-162/162-162	878-878/878-878	285-285/285-285	14/14	1.5	3.0	1.59								
	575/60/3	1	623	700	700	4	130-130-130-130	705-705-705-705	229-229-229-229	28	1.5	2.5	1.59								
	575/60/3	2	328/328	450/450	400/400	4	130-130/130-130	705-705/705-705	229-229/229-229	14/14	1.5	2.5	1.59								
	400/50/3	1	882	1000	1000	4	189-189-189-189	1089-1089-1089-1089	354-354-354-354	28	1.5	2.8	1.59								
	400/50/3	2	465/465	600/600	600/600	4	189-189/189-189	1089-1089/1089-1089	354-354/354-354	14/14	1.5	2.8	1.59								

Notes:

- As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
- Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
- MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
- RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
- RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
- Local codes may take precedence.
- Control kW includes operational controls only. Does not include evaporator heaters.
- XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
- VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440
- A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
- If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
- When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.



Electrical Data

Table E-3 — Unit Electrical Data for High Efficiency at High Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring				Motor Data						
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4)		Compressor (Each)			Fans (Each)			Control kW (7)
					Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW	FLA	
RTAC 140	200/60/3	1	673	800	800	2	270-270	NA	487-487	10	1.5	6.5	0.83
	200/60/3	2	370/370	600/600	450/450	2	270/270	NA	487/487	5/5	1.5	6.5	0.83
	230/60/3	1	594	700	700	2	235-235	NA	427-427	10	1.5	6.5	0.83
	230/60/3	2	327/327	500/500	400/400	2	235/235	NA	427/427	5/5	1.5	6.5	0.83
	380/60/3	1	355	400	400	2	142-142	801-801	260-260	10	1.5	3.5	0.83
	380/60/3	2	195/195	300/300	250/250	2	142/142	801/801	260/260	5/5	1.5	3.5	0.83
	460/60/3	1	296	400	350	2	118-118	652-652	212-212	10	1.5	3.0	0.83
	460/60/3	2	163/163	250/250	200/200	2	118/118	652/652	212/212	5/5	1.5	3.0	0.83
	575/60/3	1	237	300	300	2	94-94	520-520	172-172	10	1.5	2.5	0.83
	575/60/3	2	130/130	200/200	175/175	2	94/94	520/520	172/172	5/5	1.5	2.5	0.83
RTAC 155	400/50/3	1	339	450	400	2	138-138	774-774	259-259	10	1.5	2.8	0.83
	400/50/3	2	187/187	300/300	225/225	2	138/138	774/774	259/259	5/5	1.5	2.8	0.83
	200/60/3	1	742	1000	1000	2	320-270	NA	600-487	11	1.5	6.5	0.83
	200/60/3	2	439/370	700/600	600/450	2	320/270	NA	600/487	6/5	1.5	6.5	0.83
	230/60/3	1	654	800	800	2	278-235	NA	506-427	11	1.5	6.5	0.83
	230/60/3	2	387/327	600/500	500/400	2	278/235	NA	506/427	6/5	1.5	6.5	0.83
	380/60/3	1	391	500	450	2	168-142	973-801	316-260	11	1.5	3.5	0.83
	380/60/3	2	231/195	350/300	300/250	2	168/142	973/801	316/260	6/5	1.5	3.5	0.83
	460/60/3	1	325	450	400	2	139-118	774-652	252-212	11	1.5	3.0	0.83
	460/60/3	2	192/163	300/250	225/200	2	139/118	774/652	252/212	6/5	1.5	3.0	0.83
RTAC 170	575/60/3	1	261	350	300	2	111-94	631-528	205-172	11	1.5	2.5	0.83
	575/60/3	2	154/130	250/200	200/175	2	111/94	631/528	205/172	6/5	1.5	2.5	0.83
	400/50/3	1	379	500	450	2	168-138	896-796	291-259	11	1.5	2.8	0.83
	400/50/3	2	227/187	350/300	300/225	2	168/138	896/796	291/259	6/5	1.5	2.8	0.83
	200/60/3	1	798	1000	1000	2	320-320	NA	600-600	12	1.5	6.5	0.83
	200/60/3	2	439/439	700/700	600/600	2	320/320	NA	600/600	6/6	1.5	6.5	0.83
	230/60/3	1	704	800	800	2	278-278	NA	506-506	12	1.5	6.5	0.83
	230/60/3	2	387/387	600/600	500/500	2	278/278	NA	506/506	6/6	1.5	6.5	0.83
	380/60/3	1	420	500	500	2	168-168	973-973	316-316	12	1.5	3.5	0.83
	380/60/3	2	231/231	350/350	300/300	2	168/168	973/973	316/316	6/6	1.5	3.5	0.83
RTAC 170	460/60/3	1	349	450	400	2	139-139	774-774	252-252	12	1.5	3.0	0.83
	460/60/3	2	192/192	300/300	225/225	2	139/139	774/774	252/252	6/6	1.5	3.0	0.83
	575/60/3	1	280	350	350	2	111-111	631-631	205-205	12	1.5	2.5	0.83
	575/60/3	2	154/154	250/250	200/200	2	111/111	631/631	205/205	6/6	1.5	2.5	0.83
	400/50/3	1	412	500	500	2	168-168	896-896	291-291	12	1.5	2.8	0.83
	400/50/3	2	227/227	350/350	300/300	2	168/168	896/896	291/291	6/6	1.5	2.8	0.83
	400/50/3	2	227/227	350/350	300/300	2	168/168	896/896	291/291	6/6	1.5	2.8	0.83
	400/50/3	2	227/227	350/350	300/300	2	168/168	896/896	291/291	6/6	1.5	2.8	0.83

Electrical Data

Table E-3 (Continued) — Unit Electrical Data for High Efficiency at High Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring				Motor Data						
			MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	Compressor (Each) XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Fans (Each) Qty. Ckt 1/Ckt 2	kW	FLA	Control kW (7)
RTAC 185	200/60/3	1	887	1200	1000	2	386-320	NA	701-600	13	1.5	6.5	0.83
	200/60/3	2	528/439	800/700	700/600	2	386/320	NA	701/600	7/6	1.5	6.5	0.83
	230/60/3	1	783	1000	1000	2	336-278	NA	571-506	13	1.5	6.5	0.83
	230/60/3	2	466/387	800/600	600/500	2	336/278	NA	571/506	7/6	1.5	6.5	0.83
	380/60/3	1	467	600	600	2	203-168	1060-973	345-316	13	1.5	3.5	0.83
	380/60/3	2	278/231	450/350	350/300	2	203/168	1060/973	345/316	7/6	1.5	3.5	0.83
	460/60/3	1	388	500	450	2	168-139	878-774	285-252	13	1.5	3.0	0.83
	460/60/3	2	231/192	350/300	300/225	2	168/139	878/774	285/252	7/6	1.5	3.0	0.83
	575/60/3	1	311	450	350	2	134-111	705-631	229-205	13	1.5	2.5	0.83
	575/60/3	2	185/154	300/250	225/200	2	134/111	705/631	229/205	7/6	1.5	2.5	0.83
RTAC 200	400/50/3	1	445	600	500	2	198-168	1089-896	354-291	13	1.5	2.8	0.83
	400/50/3	2	267/227	450/350	350/300	2	198/168	1089/896	354/291	7/6	1.5	2.8	0.83
	200/60/3	1	960	1200	1200	2	386-386	NA	701-701	14	1.5	6.5	0.83
	200/60/3	2	528/528	800/800	700/700	2	386/386	NA	701/701	7/7	1.5	6.5	0.83
	230/60/3	1	847	1000	1000	2	336-336	NA	571-571	14	1.5	6.5	0.83
	230/60/3	2	466/466	800/800	600/600	2	336/336	NA	571/571	7/7	1.5	6.5	0.83
	380/60/3	1	506	700	600	2	203-203	1060-1060	345-345	14	1.5	3.5	0.83
	380/60/3	2	278/278	450/450	350/350	2	203/203	1060/1060	345/345	7/7	1.5	3.5	0.83
	460/60/3	1	420	500	500	2	168-168	878-878	285-285	14	1.5	3.0	0.83
	460/60/3	2	231/231	350/350	300/300	2	168/168	878/878	285/285	7/7	1.5	3.0	0.83
RTAC 225	575/60/3	1	337	450	400	2	134-134	705-705	229-229	14	1.5	2.5	0.83
	575/60/3	2	185/185	300/300	225/225	2	134/134	705/705	229/229	7/7	1.5	2.5	0.83
	400/50/3	1	485	600	600	2	198-198	1089-1089	354-354	14	1.5	2.8	0.83
	400/50/3	2	267/267	450/450	350/350	2	198/198	1089/1089	354/354	7/7	1.5	2.8	0.83
	200/60/3	1	1051	1200	1200	2	459-358	NA	821-701	14	1.5	6.5	0.83
	200/60/3	2	626/522	1000/800	800/700	2	459/358	NA	821/701	8/6	1.5	6.5	0.83
	230/60/3	1	926	1200	1200	2	399-336	NA	691-571	14	1.5	6.5	0.83
	230/60/3	2	551/459	800/700	700/600	2	399/336	NA	691/571	8/6	1.5	6.5	0.83
	380/60/3	1	555	700	700	2	242-203	1306-1060	424-345	14	1.5	3.5	0.83
	380/60/3	2	331/275	500/450	400/350	2	242/203	1306/1060	424/345	8/6	1.5	3.5	0.83
RTAC 225	460/60/3	1	460	600	600	2	200-168	1065-878	346-285	14	1.5	3.0	0.83
	460/60/3	2	274/228	450/350	350/300	2	200/168	1065/878	346/285	8/6	1.5	3.0	0.83
	575/60/3	1	369	500	450	2	160-134	853-705	277-229	14	1.5	2.5	0.83
	575/60/3	2	220/183	350/300	300/225	2	160/134	853/705	277/229	8/6	1.5	2.5	0.83

Electrical Data

Table E-3 (Continued) — Unit Electrical Data for High Efficiency at High Ambient Operation

Unit Wiring								Motor Data						
Unit Size	Rated Voltage	# of Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Max. Fuse, HACR Breaker or MOP (11) Ckt 1/Ckt 2	Rec. Time Delay or RDE (4)		RLA (5) Ckt 1/Ckt 2	Compressor (Each)		Fans (Each)			Control kW (7)	
						Qty		XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW	FLA		
RTAC 250	200/60/3	1	1137	1200	1200	2	459-459	NA	821-821	16	1.5	6.5	0.83	
	200/60/3	2	626/626	1000/1000	800/800	2	459/459	NA	821/821	8/8	1.5	6.5	0.83	
	230/60/3	1	1002	1200	1200	2	399-399	NA	691-691	16	1.5	6.5	0.83	
	230/60/3	2	551/551	800/800	700/700	2	399/399	NA	691/691	8/8	1.5	6.5	0.83	
	380/60/3	1	601	800	700	2	242-242	1306-1306	424-424	16	1.5	3.5	0.83	
	380/60/3	2	331/331	500/500	400/400	2	242/242	1306/1306	424/424	8/8	1.5	3.5	0.83	
	460/60/3	1	498	600	600	2	200-200	1065-1065	346-346	16	1.5	3.0	0.83	
	460/60/3	2	274/274	450/450	350/350	2	200/200	1065/1065	346/346	8/8	1.5	3.0	0.83	
	575/60/3	1	400	500	450	2	160-160	853-853	277-277	16	1.5	2.5	0.83	
	575/60/3	2	220/220	350/350	300/300	2	160/160	853/853	277/277	8/8	1.5	2.5	0.83	
	400/50/3	1	569	700	700	3	138-138-198	796-796-1089	259-259-354	16	1.5	2.8	1.2	
	400/50/3	2	339/265	450/450	400/350	3	138-138/198	796-796/1089	259-259/354	10/6	1.5	2.8	1.2	
RTAC 275	200/60/3	1	NA											
	200/60/3	2	798/522	1000/800	1000/700	3	320-320/386	NA	600-600/701	12/6	1.5	6.5	1.2	
	230/60/3	1	NA											
	230/60/3	2	704/459	800/700	800/600	3	278-278/336	NA	506-506/571	12/6	1.5	6.5	1.2	
	380/60/3	1	NA											
	380/60/3	2	420/275	500/450	500/350	3	168-168/203	973-973/1060	316-316/345	12/6	1.5	3.5	1.2	
	460/60/3	1	542	700	600	3	139-139-168	774-774-878	252-252-285	18	1.5	3.0	1.2	
	460/60/3	2	349/228	450/350	400/300	3	139-139/168	774-774/878	252-252/285	12/6	1.5	3.0	1.2	
	575/60/3	1	435	500	500	3	111-111-134	631-631-705	205-205-229	18	1.5	2.5	1.2	
	575/60/3	2	280/183	350/300	350/225	3	111-111/134	631-631/705	205-205/229	12/6	1.5	2.5	1.2	
	400/50/3	1	634	800	700	3	168-168-198	896-896-1089	291-291-354	18	1.5	2.8	1.2	
	400/50/3	2	412/265	500/450	500/350	3	168-168/198	896-896/1089	291-291/354	12/6	1.5	2.8	1.2	
RTAC 300	200/60/3	1	NA											
	200/60/3	2	960/522	1200/800	1200/700	3	386-386/386	NA	701-701/701	14/6	1.5	6.5	1.2	
	230/60/3	1	NA											
	230/60/3	2	847/459	1000/700	1000/600	3	336-336/336	NA	571-571/571	14/6	1.5	6.5	1.2	
	380/60/3	1	NA											
	380/60/3	2	506/275	700/450	600/350	3	203-203/203	1060-1060/1060	345-345/345	14/6	1.5	3.5	1.2	
	460/60/3	1	606	700	700	3	168-168-168	878-878-878	285-285-285	20	1.5	3.0	1.2	
	460/60/3	2	420/228	500/350	500/300	3	168-168/168	878-878/878	285-285/285	14/6	1.5	3.0	1.2	
	575/60/3	1	486	600	600	3	134-134-134	705-705-705	229-229-229	20	1.5	2.5	1.2	
	575/60/3	2	337/183	450/300	400/225	3	134-134/134	705-705/705	229-229/229	14/6	1.5	2.5	1.2	
	400/50/3	1	700	800	800	3	198-198-198	1089-1089-1089	354-354-354	20	1.5	2.8	1.2	
	400/50/3	2	485/265	600/450	600/350	3	198-198/198	1089-1089/1089	354-354/354	14/6	1.5	2.8	1.2	
RTAC 350	200/60/3	1	NA											
	200/60/3	2	798/798	1000/1000	1000/1000	4	320-320/320-320	NA	600-600/600-600	12/12	1.5	6.5	1.2	
	230/60/3	1	NA											
	230/60/3	2	704/704	800/800	800/800	4	278-278/278-278	NA	506-506/506-506	12/12	1.5	6.5	1.2	
	380/60/3	1	NA											
	380/60/3	2	420/420	500/500	500/500	4	168-168/168-168	973-973/973-973	316-316/316-316	12/12	1.5	3.5	1.2	
	460/60/3	1	663	800	700	4	139-139-139-139	774-774-774-774	252-252-252-252	24	1.5	3.0	1.2	
	460/60/3	2	349/349	450/450	400/400	4	139-139/139-139	774-774/774-774	252-252/252-252	12/12	1.5	3.0	1.2	
	575/60/3	1	532	600	600	4	111-111-111-111	631-631-631-631	205-205-205-205	24	1.5	2.5	1.2	
	575/60/3	2	280/280	350/350	350/350	4	111-111/111-111	631-631/631-631	205-205/205-205	12/12	1.5	2.5	1.2	
	400/50/3	1	782	800	800	4	168-168-168-168	896-896-896-896	291-291-291-291	24	1.5	2.8	1.59	
	400/50/3	2	412/412	500/500	500/500	4	168-168/168-168	896-896/896-896	291-291/291-291	12/12	1.5	2.8	1.59	

Electrical Data

Table E-3 (Continued) — Unit Electrical Data for High Efficiency at High Ambient Operation

Unit Size	Rated Voltage	# of Power Conns (1)	Unit Wiring		Rec. Time		Compressor (Each)		Fans (Each)		Control kW (7)
			MCA (3)	Max. Fuse, HACR Breaker or MOP (11)	Delay or RDE (4)	Qty	XLRA (8)	YLRA (8)	Qty.	FLA	
			Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2		Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	
RTAC	400/50/3	1	855	1000	1000	4	198-198-168-168	1089-1089-896-896	354-354-291-291	26	1.5
375	400/50/3	2	485/412	600/500	600/500	4	198-198/168-168	1089-1089/896-896	354-354/291-291	14/12	1.5
	200/60/3	1	NA								
	200/60/3	2	960/960	1200/1200	1200/1200	4	386-386/386-386	NA	701-701/701-701	14/14	1.5
	230/60/3	1	NA								
	230/60/3	2	847/847	1000/1000	1000/1000	4	336-336/336-336	NA	571-571/571-571	14/14	1.5
RTAC	380/60/3	1	NA								
400	380/60/3	2	505/506	700/700	600/600	4	203-203/203-203	1060-1060/1060-1060	345-345/345-345	14/14	1.5
	460/60/3	1	798	800	800	4	168-168-168-168	878-878-878-878	285-285-285-285	28	1.5
	460/60/3	2	420/420	500/500	500/500	4	168-168/168-168	878-878/878-878	285-285/285-285	14/14	1.5
	575/60/3	1	640	700	700	4	134-134-134-134	705-705-705-705	229-229-229-229	28	1.5
	575/60/3	2	337/337	450/450	400/400	4	134-134/134-134	705-705/705-705	229-229/229-229	14/14	1.5
	400/50/3	1	920	1000	1000	4	198-198-198-198	1089-1089-1089-1089	354-354-354-354	28	1.5
	400/50/3	2	485/485	600/600	600/600	4	198-198/198-198	1089-1089/1089-1089	354-354/354-354	14/14	1.5

Notes:

- As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
- Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
- MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
- RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
- RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
- Local codes may take precedence.
- Control kW includes operational controls only. Does not include evaporator heaters.
- XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
- VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440
- A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
- If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
- When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.

Electrical Connections

Table E-4 – Customer Wire Selection for Single Point Units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block	Wire Selection Size to Main Terminal Block	Wire Selection Size to Disconnect (2)	Wire Selection Size to Circuit Breaker (2)
		XL Starter Connector Wire Range	YD Starter Connector Wire Range	Connector Wire Range	Connector Wire Range
RTAC 140 STD	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	380V-60Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	575V-60Hz	Lug Size F	Lug Size F	Lug Size C	Lug Size C
RTAC 140 HIGH	400V-50Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	380V-60Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
RTAC 155 STD	575V-60Hz	Lug Size F	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 155 HIGH	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC 170 STD	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC 170 HIGH	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 185 STD	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
RTAC 185 HIGH	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 200 STD	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
RTAC 200 HIGH	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B

Electrical Connections

Table E-4 (Continued) – Customer Wire Selection for Single Point Units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block	Wire Selection Size to Main Terminal Block	Wire Selection Size to Disconnect (2)	Wire Selection Size to Circuit Breaker (2)
		XL Starter Connector Wire Range	YD Starter Connector Wire Range	Connector Wire Range	Connector Wire Range
RTAC 225 STD	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
RTAC 225 HIGH	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
RTAC 250 STD	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size A	Lug Size A
RTAC 250 HIGH	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 275 STD	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 275 HIGH	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC 300 STD	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC 300 HIGH	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
RTAC 350 STD	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
RTAC 350 HIGH	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 400 STD	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
RTAC 400 HIGH	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC 450 STD	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC 500 STD	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA

Lug Size A = (1) 4/0 to 600 MCM per phase
 Lug Size B = (4) 4/0 to 500 MCM per phase
 Lug Size C = (1) #3 to 350 MCM per phase
 Lug Size D = (1) #2 to 500 MCM per phase
 Lug Size E (5) = (2) 1/0 to 250 MCM per phase
 Lug Size F = (2) #4 to 500 MCM per phase
 Lug Size G = (2) #2 to 600 MCM per phase
 Lug Size H = (2) 400 to 500 MCM per phase
 Lug Size I (5) = (1) #2 to 750 MCM per phase

Lug Size J = (1) 250 to 500 MCM per phase
 Lug Size K = (2) 3/0 to 350 MCM per phase
 Lug Size L = (4) #2 to 600 MCM per phase
 Lug Size M = (2) #4 to 600 MCM per phase
 Lug Size N = (2) #2 to 600 MCM per phase
 Lug Size O = (1) #2 to 250 MCM per phase

- As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
- Non-fused unit disconnect and circuit breaker are optional.
- Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
- Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
- A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

[illegible]

[illegible]

Electrical Connections

Table E-5 (Continued) – Customer Wire Selection for Dual Point Units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block	Wire Selection Size to Main Terminal Block	Wire Selection Size to Disconnect (2)	Wire Selection Size to Circuit Breaker (2)
		XL Starter Connector Wire Range Ckt 1 / Ckt 2	YD Starter Connector Wire Range Ckt 1 / Ckt 2	Connector Wire Range Ckt 1 / Ckt 2	Connector Wire Range Ckt 1 / Ckt 2
RTAC 375 STD	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 375 HIGH	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 400 STD	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
RTAC 400 HIGH	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 450 STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size H	Lug Size B/Lug Size H
RTAC 500 STD	460V-60Hz	Lug Size L/Lug Size L	Lug Size N/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	575V-60Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size F	Lug Size B/Lug Size A	Lug Size B/Lug Size A
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 500 STD	460V-60Hz	Lug Size L/Lug Size L	Lug Size N/Lug Size N	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	575V-60Hz	Lug Size G/Lug Size G	Lug Size F/Lug Size L	Lug Size B/Lug Size A	Lug Size B/Lug Size A

Lug Size A = (1) 4/0 to 600 MCM per phase
 Lug Size B = (4) 4/0 to 500 MCM per phase
 Lug Size C = (1) #3 to 350 MCM per phase
 Lug Size D = (1) #2 to 500 MCM per phase
 Lug Size E (5) = (2) 1/0 to 250 MCM per phase
 Lug Size F = (2) #4 to 500 MCM per phase
 Lug Size G = (2) #2 to 600 MCM per phase
 Lug Size H = (2) 400 to 500 MCM per phase
 Lug Size I (5) = (1) #2 to 750 MCM per phase
 Lug Size J = (1) 250 to 500 MCM per phase
 Lug Size K = (2) 3/0 to 350 MCM per phase
 Lug Size L = (4) #2 to 600 MCM per phase
 Lug Size M = (2) #4 to 600 MCM per phase
 Lug Size N = (2) #2 to 600 MCM per phase
 Lug Size O = (1) #2 to 250 MCM per phase

- As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
- Non-fused unit disconnect and circuit breaker are optional.
- Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
- Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
- A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

Controls

Standalone Controls

Human Interfaces

The Trane air-cooled Model RTAC chiller offers two easy-to-use operator interface panels, the EasyView and the DynaView.

EasyView is a coded display that allows the user to access the current leaving water temperature, its setpoint, and any recent diagnostics.

DynaView is an LCD touchscreen display that is navigated by file tabs. This is an advanced interface that allows the user to access any important information concerning setpoints, active temperatures, modes, electrical data, pressures, and diagnostics.

Safety Controls

A centralized microcomputer offers a higher level of machine protection. Since the safety controls are smarter, they limit compressor operation to avoid compressor or evaporator failures, thereby minimizing nuisance shutdown. Tracer™ Chiller Controls directly senses the control variables that govern the operation of the chiller: motor current draw, evaporator pressure and condenser pressure. When any one of these variables approaches a limit condition where damage may occur to the unit or shutdown on a safety, Tracer Chiller Controls takes corrective action to avoid shutdown and keep the chiller operating. This happens through combined actions of compressor slide valve modulation, electronic expansion valve modulation and fan staging. Tracer Chiller Controls optimizes total chiller power consumption during normal operating conditions. During abnormal operating conditions, the microprocessor will continue to optimize chiller performance by taking the corrective action necessary to avoid shutdown. This keeps cooling capacity available until the problem can be solved. Whenever possible, the chiller is allowed to perform its function; making

Figure C1 — DynaView Operator Interface



Figure C2 — EasyView Operator Interface



chilled water. In addition, microcomputer controls allow for more types of protection such as over and under voltage. Overall, the safety controls help keep the building or process running and out of trouble.

Standalone Controls

Interface to standalone units is very simple; only a remote auto/stop for scheduling is required for unit operation. Signals from the chilled water pump contactor auxiliary or a flow switch are wired to the chilled waterflow interlock. Signals from a time clock or some other remote device are wired to the external auto/stop input.

Standard Features

- **External Auto/Stop** — A jobsite provided contact closure will turn the unit on and off.
- **Chilled Waterflow Interlock** — A jobsite provided contact closure from a chilled water pump contactor or a flow switch is required and will allow unit operation if a load exists. This feature will allow the unit to run in conjunction with the pump system.
- **External Interlock** — A jobsite supplied contact opening wired to this input will turn the unit off and require a manual reset of the unit microcomputer. This closure is typically triggered by a jobsite supplied system such as a fire alarm.
- **Chilled Water Pump Control** — Unit controls provide an output to control the chilled water pump(s). One contact closure to the chiller is all that is required to initiate the chilled water system. Chilled water pump control by the chiller is a requirement on the Air-Cooled Series R.
- **Chilled Water Temperature Reset** — Reset can be based on return water temperature or outdoor air temperature.

Generic Building Automation System Controls

Easy Interface to A Generic Building Management System

Controlling the air-cooled Series R chiller with building management systems is state-of-the-art, yet simple with either the LonTalk Communications Interface for Chillers (LCI-C) or Generic Building Management System Hardwire Points.

Simple Interface with Other Control Systems

Microcomputer controls afford simple interface with other control systems, such as time clocks, building automation systems, and ice storage systems. This means you have the flexibility to meet job requirements while not having to learn a complicated control system. This setup has the same standard features as a stand-alone water chiller, with the possibility of having additional optional features.

What are LonTalk, Echelon, and LonMark?

LonTalk is a communications protocol developed by the Echelon Corporation. The LonMark association develops control profiles using the LonTalk communication protocol. LonTalk is a unit level communications protocol, unlike BACNet used at the system level.

LonTalk Communications Interface for Chillers (LCI-C)

LonTalk Communications Interface for Chillers (LCI-C) provides a generic automation system with the LonMark chiller profile inputs/outputs. The inputs/outputs include both mandatory and optional network variables. Note: LonMark network variable names are in parentheses when different from chiller naming convention.

Chiller Inputs:

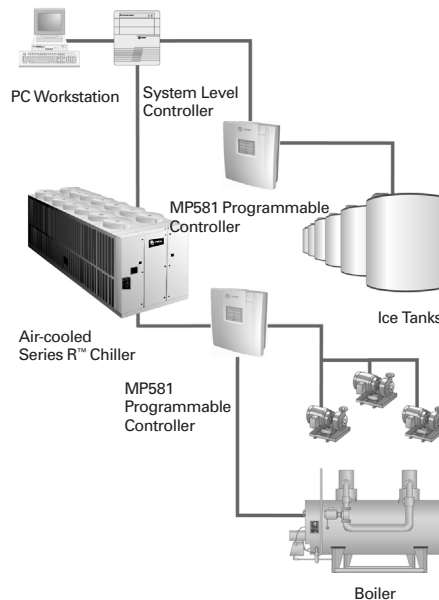
- Chiller Enable/Disable
- Chilled Liquid Setpoint (Cool Setpoint)
- Current Limit Setpoint (Capacity Limit Input)
- Ice Making (Chiller Mode)

Chiller Enable/Disable

Allows for chiller to be started or stopped depending on if certain operating conditions are met.

Chilled Liquid Setpoint

Allows for the external setting independent of the front panel setpoint to adjust the leaving water temperature setpoint.



Current Limit Setpoints

Allows for the external setting independent of the front panel setpoint to limit the capacity level of the chiller.

Ice Making

Provides interface with ice making control systems. Please refer to page 54 for more information.

Chiller Outputs:

- On/Off
- Active Setpoint
- Average Percent RLA (Actual Capacity Level)
- Active Current Limit Setpoint (Capacity Limit)
- Leaving Chilled Water Temperature
- Entering Chilled Water Temperature
- Alarm Descriptor
- Chiller Status

On/Off

Indicates the current state of the chiller

Active Setpoint

Indicates the current value of the leaving water temperature setpoint

Average Percent RLA

Provides the current capacity level via %RLA

Active Current Limit Setpoint

Provides the current capacity level setpoint via %RLA

Leaving Chilled Water Temperature

Provides the current leaving water temperature

Entering Chilled Water Temperature

Provides the current entering water temperature

Alarm Descriptor

Provides alarm messages based on pre-determined criteria

Chiller Status

Indicates the running modes and states of the chiller, i.e. Running in alarm mode, chiller enabled, chiller being locally controlled, etc...

Generic Building Management System Hardwire Points

GBAS may be achieved via hardware input/output as well. The input/outputs are as follows:

Chiller hardware inputs include:

- Chiller enable/disable
- Circuit enable/disable
- External chilled water setpoint
- External current limit setpoint
- Ice making enable

External Chilled Water Setpoint

Allows the external setting independent of the front panel setpoint by one of two means:

- 2-10 VDC input, or
- 4-20 mA input

External Current Limit Setpoint

Allows the external setting independent of the front panel setpoint by one of two means:

- 2-10 VDC input, or
- 4-20 mA input

Chiller hardware outputs include:

- Compressor running indication
- Alarm indication (Ckt 1/Ckt 2)
- Maximum capacity
- Ice making status

Alarm Indication Contacts

The unit provides three single-pole/double-throw contact closures to indicate:

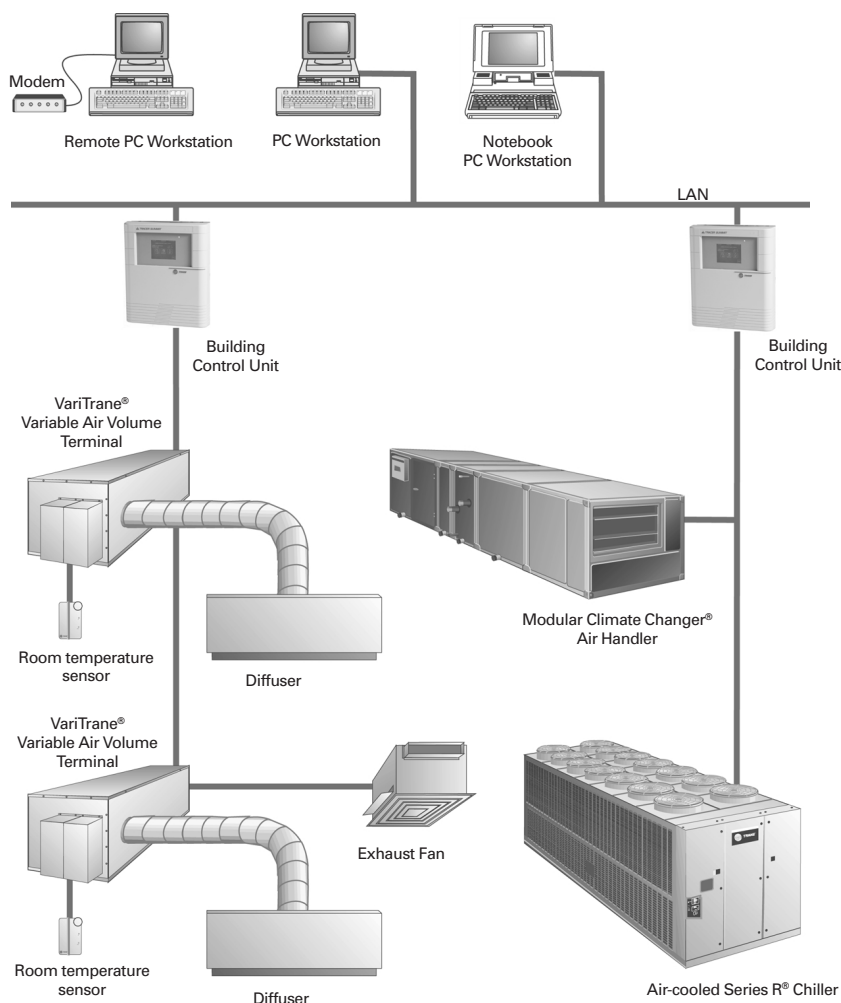
- Compressor on/off status
 - Compressor running at maximum capacity
 - Failure has occurred (Ckt 1/Ckt 2)
- These contact closures may be used to trigger jobsite supplied alarm lights or alarm bells.

Ice Making Control

Provides interface with ice making control systems.

Controls

Trane Integrated Comfort System Controls



Tracer Summit controls — Interface With The Trane Integrated Comfort System (ICS)

Trane Chiller Plant Control

The Tracer Summit Chiller Plant Building Management System with Chiller Plant Control provides building automation and energy management functions through stand-alone control. The Chiller Plant Control is capable of monitoring and controlling your entire chiller plant system.

Application software available:

- Time-of-day scheduling
- Demand limiting
- Chiller sequencing
- Process control language
- Boolean processing
- Zone control

- Reports and logs
- Custom messages
- Run time and maintenance
- Trend log
- PID control loops

And of course, the Trane Chiller Plant Control can be used on a stand-alone basis or tied into a complete building automation system.

When the air-cooled Series R™ chiller is used in conjunction with a Trane Tracer™ Summit system, the unit can be monitored and controlled from a remote location. The air-cooled Series R chiller can be controlled to fit into the overall building automation strategy by using time of day scheduling, timed override, demand limiting, and chiller sequencing. A building owner can completely

monitor the air-cooled Series R chiller from the Tracer system, since all of the monitoring information indicated on the unit controller's microcomputer can be read off the Tracer system display. In addition, all the powerful diagnostic information can be read back at the Tracer system. Best of all, this powerful capability comes over a single twisted pair of wires! Air-cooled Series R chillers can interface with many different external control systems, from simple stand-alone units to ice making systems. Each unit requires a single-source, three-phase power supply and a 115V/60Hz, 220V/50Hz power supply. The added power supply powers the evaporator heaters.

A single twisted pair of wires tied directly between the air-cooled Series R™ chiller and a Tracer™ Summit system provides control, monitoring and diagnostic capabilities. Control functions include auto/stop, adjustment of leaving water temperature setpoint, compressor operation lockout for kW demand limiting and control of ice making mode. The Tracer system reads monitoring information such as entering and leaving evaporator water temperatures and outdoor air temperature. Over 60 individual diagnostic codes can be read by the Tracer system. In addition, the Tracer system can provide sequencing control for up to 25 units on the same chilled water loop. Pump sequencing control can be provided from the Tracer system. Tracer ICS is not available in conjunction with the remote display or the external setpoint capability.

Required Options

Tracer Interface

External Trane Devices Required

Tracer Summit™, Tracer 100 System or Tracer Chiller Plant Control

Additional Features That May Be Used

Ice Making Control



Trane Integrated Comfort Controls System Controls

Ice Making Systems Controls

An ice making option may be ordered with the air-cooled Series R™ chiller. The unit will have two operating modes, ice making and normal daytime cooling. In the ice making mode, the air-cooled Series R chiller will operate at full compressor capacity until the return chilled fluid temperature entering the evaporator meets the ice making setpoint. This ice making setpoint is manually adjusted on the unit's microcomputer. Two input signals are required to the air-cooled Series R chiller for the ice making option. The first is an auto/stop signal for scheduling and the second is required to switch the unit in between the ice making mode and normal daytime operation. The signals are provided by a remote job site building automation device such as a time clock or a manual switch. In addition, the signals may be provided over the twisted wire pair from a Tracer system or LonTalk Communication Interface but will require the communication boards provided with the Ice Making Control Option.

Additional Options That May Be Used In Conjunction

- Failure Indication Contacts
- Communications Interface (For Tracer Systems)
- Chilled Water Temperature Reset

Additional Tracer Summit Features

Trane Chiller Plant Automation

Trane's depth of experience in chillers and controls makes us a well-qualified choice for automation of chiller plants using air-cooled Series R® chillers®. The chiller plant control capabilities of the Trane Tracer Summit® building automation system are unequaled in the industry. Our chiller plant automation software is fully pre-engineered and tested. It is a standard software application, not custom programming which can prove to be difficult to support, maintain, and modify.

Energy Efficiency

Trane chiller plant automation intelligently sequences starting of chillers to optimize the overall chiller plant energy efficiency. Individual chillers are designated to operate as base, peak, or swing based on capacity and efficiency. Sophisticated software automatically determines which chiller to run in response to current conditions. The software also automatically rotates individual chiller operation to equalize runtime and wear between chillers.

Trane chiller plant automation enables unique energy-saving strategies. An example is controlling pumps, and chillers from the perspective of overall system energy consumption. The software intelligently evaluates and selects the lowest energy consumption alternative.

Keeping Operators Informed

A crucial part of efficiently running a chiller plant is assuring that the operations staff is instantly aware of what is happening in the plant. Graphics showing schematics of chillers, piping, pumps, and towers clearly depict the chiller plant system, enabling building operators to easily monitor overall conditions. Status screens display both current conditions and upcoming automated control actions to add or subtract chiller capacity. Series R and other chillers can be monitored and controlled from a remote location.

Tracer Summit features standard report templates listing key operating data for troubleshooting and verifying performance. Reports for each type of Trane chiller and three and six-chiller systems are also standard. Detailed reports showing chiller runtimes aid in planning for preventative maintenance.

Swift Emergency Response

We understand the importance of maintaining chilled water production while protecting your chillers from costly damage. If no water flow is detected to a chiller's piping, the start sequence is aborted to protect the chiller. The next chiller in the sequence is immediately started to maintain cooling.

In the event of a problem, the operator receives an alarm notification and diagnostic message to aid in quick and accurate troubleshooting. A snapshot report showing system status just prior to an emergency shutdown helps operators determine the cause. If emergency conditions justify an immediate manual shutdown, the operator can override the automatic control.

Easy Documentation for Regulatory Compliance

Comprehensive documentation of refrigerant management practices is now a fact of life. Trane chiller plant automation generates the reports mandated in ASHRAE Guideline 3.

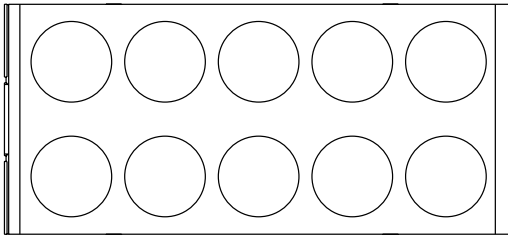
Integrated Comfort™ Capabilities

When integrated with a Tracer Summit building management system performing building control, Trane chiller plant automation coordinates with Tracer Summit applications to optimize the total building operation. With this system option, the full breadth of Trane's HVAC and controls experience are applied to offer solutions to many facility issues. If your project calls for an interface to other systems, Tracer Summit can share data via BACnet™, the ASHRAE open systems protocol.

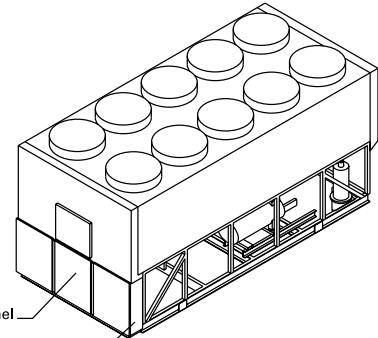
Dimensional Data

Mounting Hole Diameter: 3/4 in (19.1mm)
 Water Connection Diameter: 4 in (102mm)
 Lifting Plate Dimensions: 6 x 5 1/2 in (152mm x 39mm)

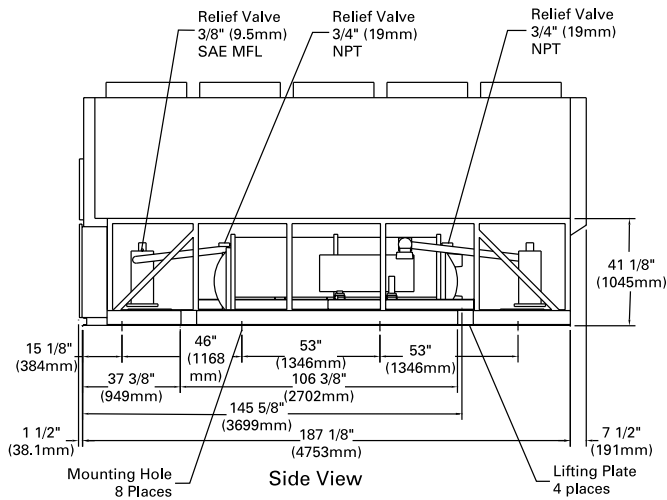
140-170 Ton, Std Eff, 50 & 60 Hz
 140 Ton, High Eff, 50 & 60 Hz



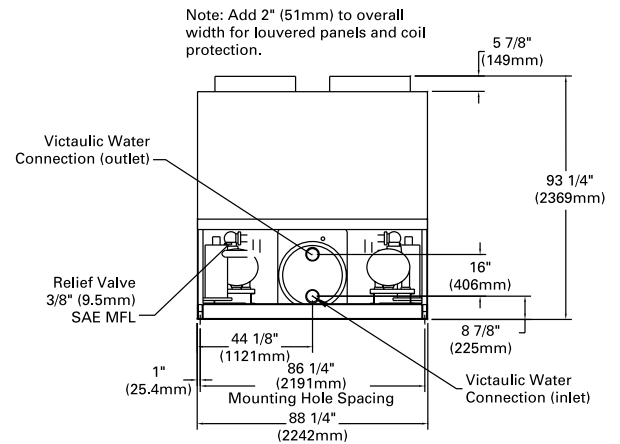
Top (Plan) View



Control Panel
 Locate customer power connections here
 Iso View



Side View



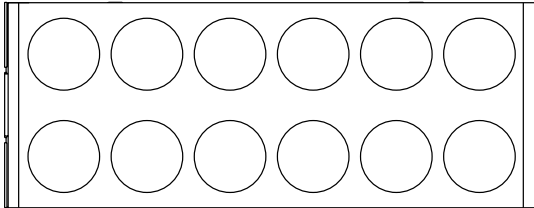
Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances.

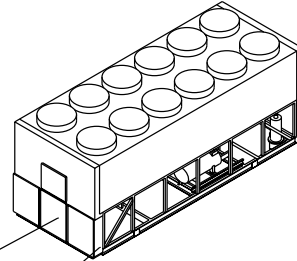
Dimensional Data

Mounting Hole Diameter: 3/4 in (19.1mm)
 Water Connection Diameter: 6 in (152mm)
 Lifting Plate Dimensions: 6 x 5 1/2 in (152mm x 139mm)

185-200 Ton, Std Eff, 50 & 60 Hz
 155-170 Ton, High Eff, 50 & 60 Hz



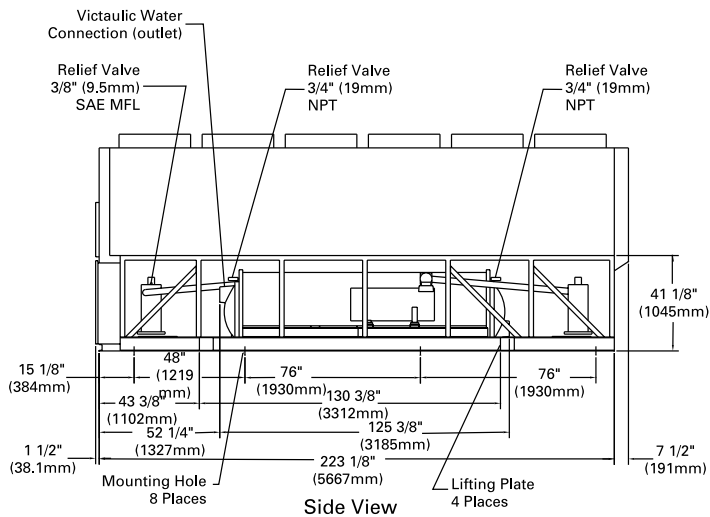
Top (Plan)
View



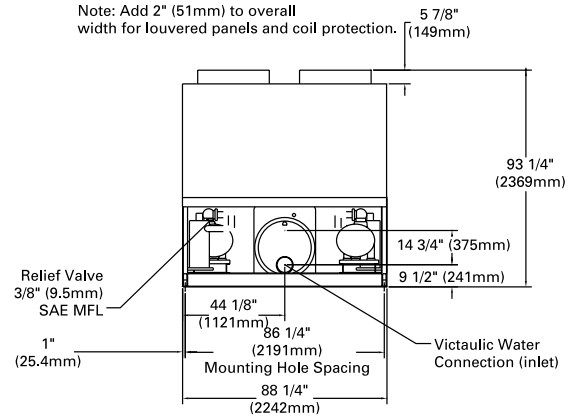
Control Panel
 Locate customer power connections here

Iso View

Note: Add 2" (51mm) to overall width for louvered panels and coil protection.



Side View



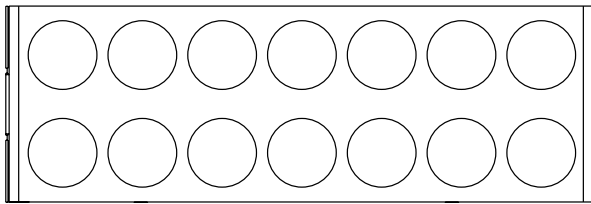
Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances.

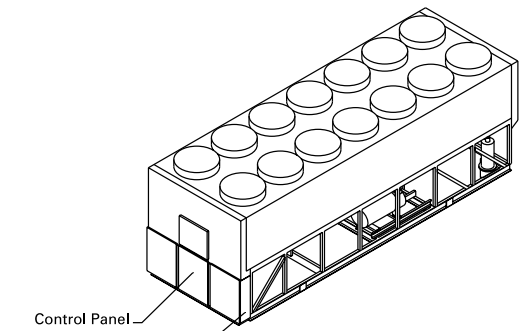
Dimensional Data

Mounting Hole Diameter: 3/4 in (19.1mm)
 Water Connection Diameter: 6 in (152mm)
 Lifting Plate Dimensions: 6 x 5 1/2 in (152mm x 139mm)

225-250 Ton, Std Eff, 60 Hz
 185-200 Ton, High Eff, 50 & 60 Hz

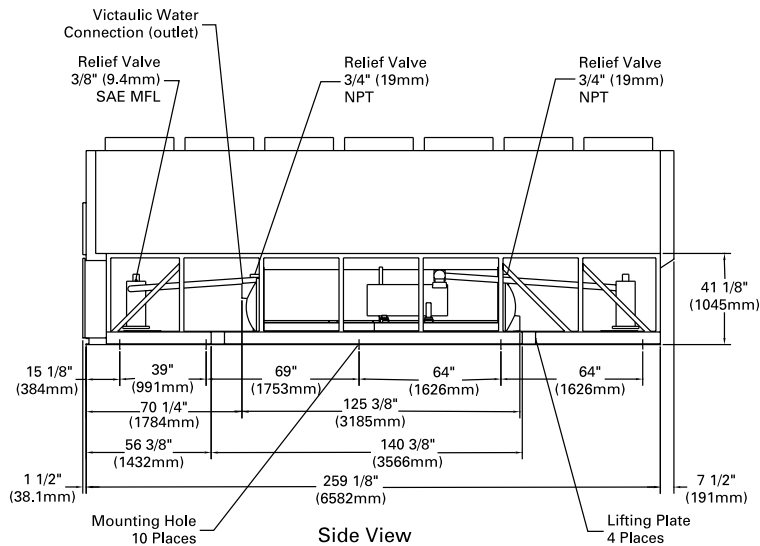


Top (Plan) View

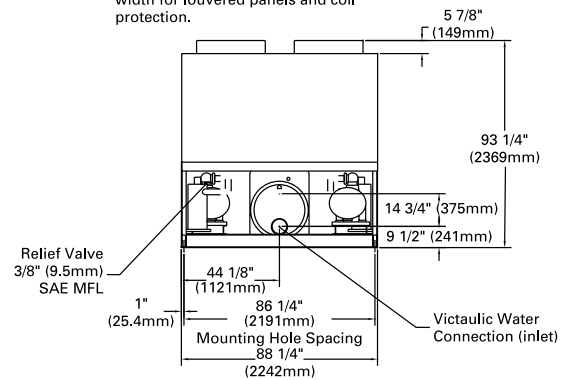


Control Panel
 Locate customer power connections here

Iso View



Note: Add 2" (51mm) to overall width for louvered panels and coil protection.



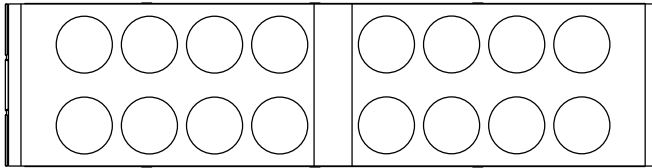
Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances.

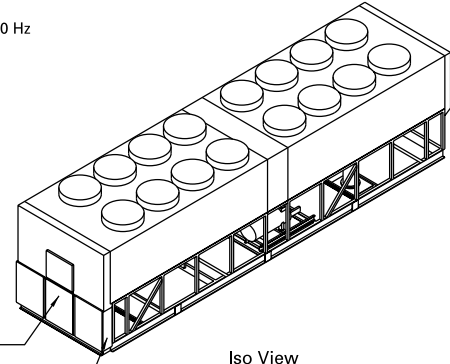
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
 Water Connection Diameter: 6" (152mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)

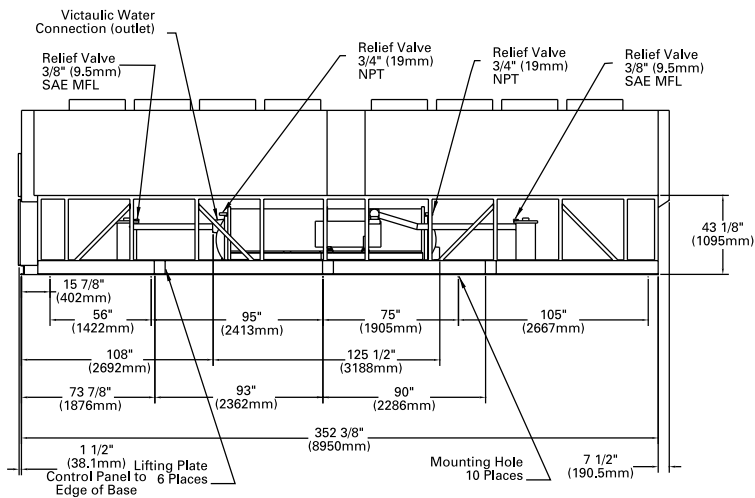
225-250 Ton, High Eff, 60 Hz



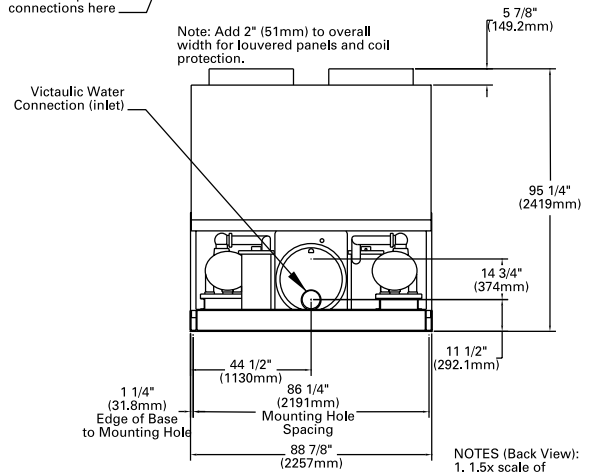
Top (Plan) View



Iso View



Side View



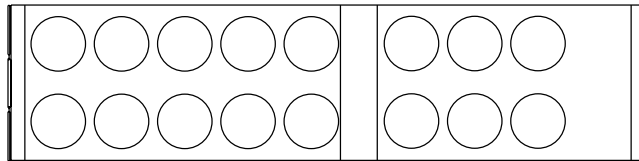
Back View

Minimum clearances are 4 feet to each side of the unit, 2 feet to the end opposite the control panel and National Electric Code Article 110-26 requirements for control panel clearances.

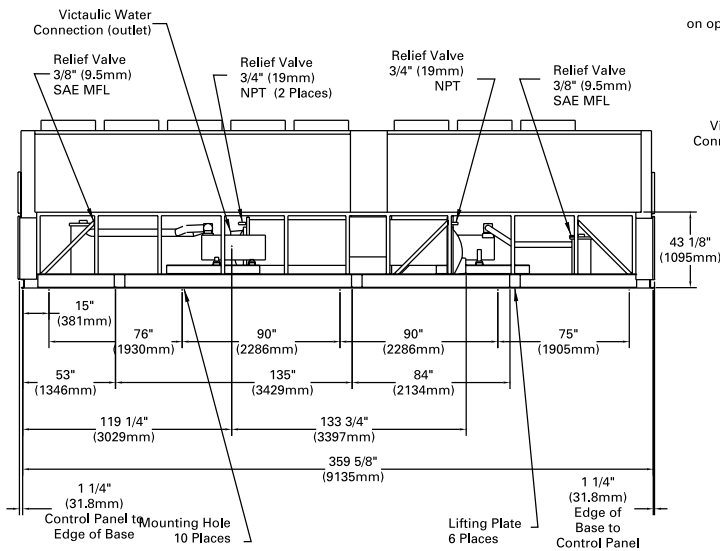
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
 Water Connection Diameter: 8" (203mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm X 152mm)

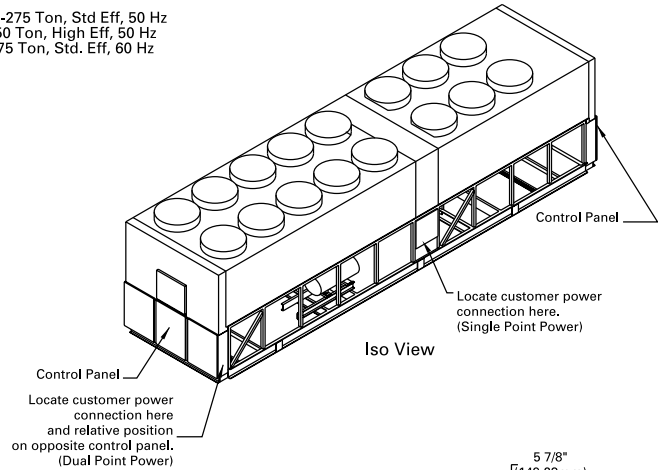
250-275 Ton, Std Eff, 50 Hz
 250 Ton, High Eff, 50 Hz
 275 Ton, Std. Eff, 60 Hz



Top (Plan) View

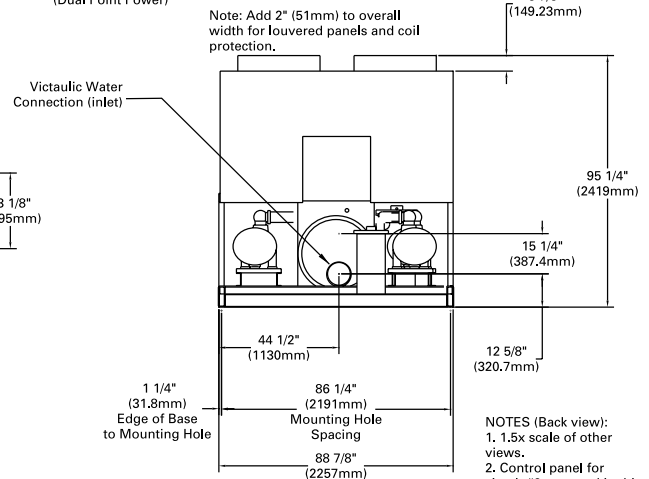


Side View



Control Panel
 Locate customer power connection here and relative position on opposite control panel. (Dual Point Power)

Iso View



Back View

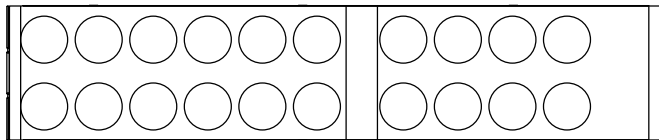
NOTES (Back view):
 1. 1.5x scale of other views.
 2. Control panel for circuit #2 removed in this view.
 3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

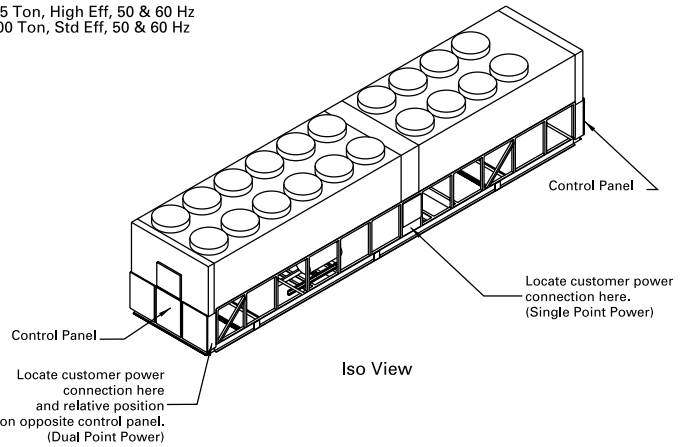
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
 Water Connection Diameter: 8" (203mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)

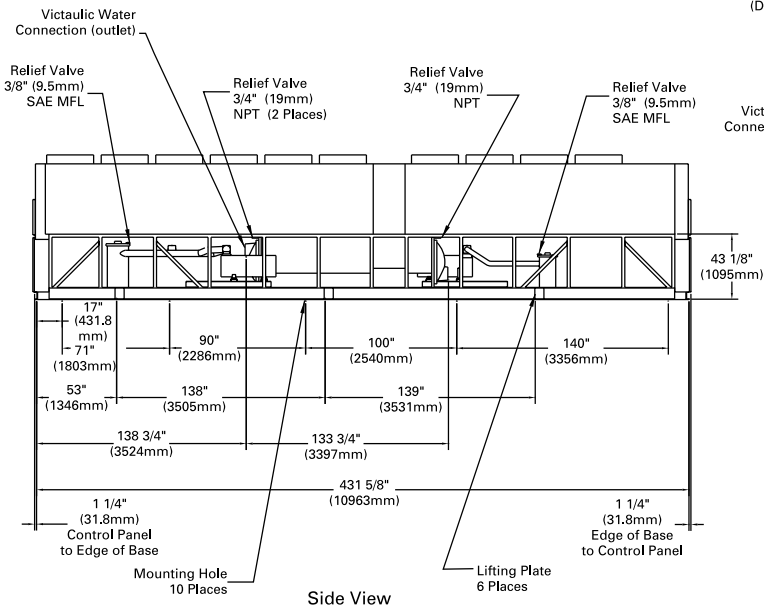
275 Ton, High Eff, 50 & 60 Hz
 300 Ton, Std Eff, 50 & 60 Hz



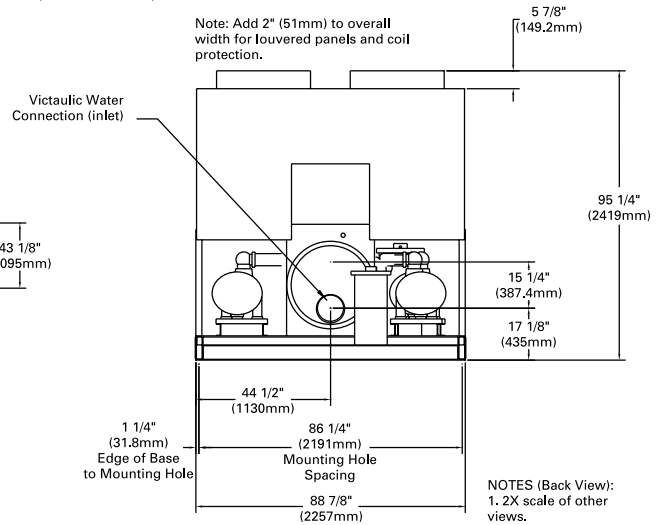
Top (Plan) View



Iso View



Side View



Back View

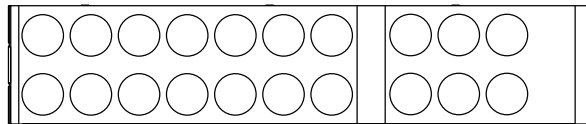
NOTES (Back View):
 1. 2X scale of other views.
 2. Control panel for circuit #2 removed in this view.
 3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

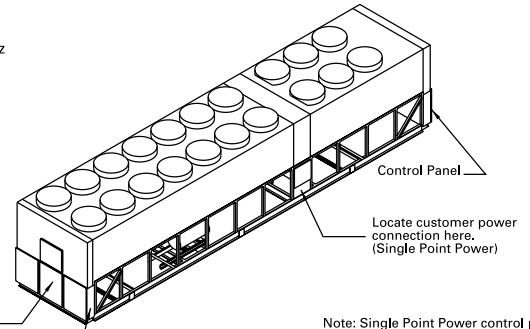
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
 Water Connection Diameter: 8" (203mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)

350 Ton, Std Eff, 60 Hz

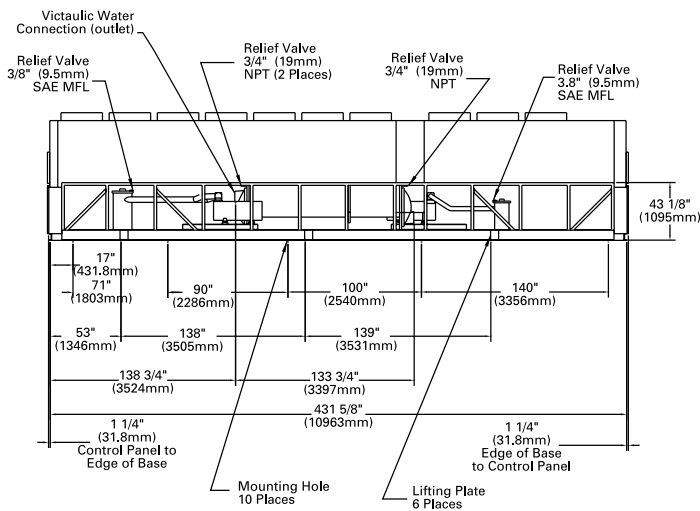


Top (Plan) View

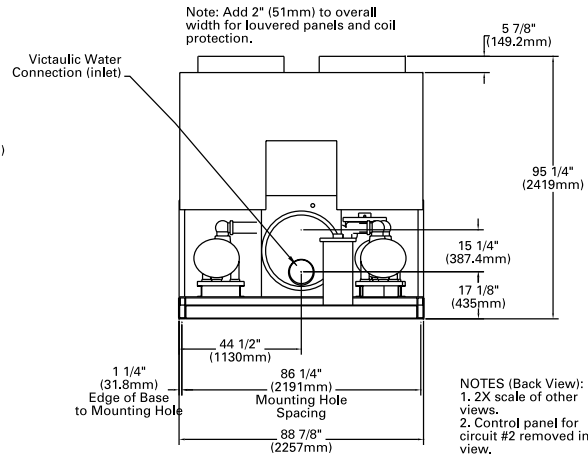


Iso View

Note: Single Point Power control panel shown in this view only for clarity in other views.



Side View



Back View

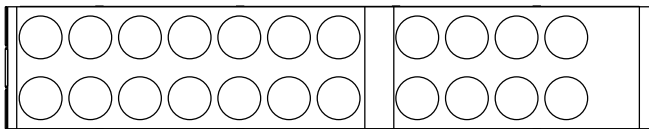
NOTES (Back View):
 1. 2X scale of other views.
 2. Control panel for circuit #2 removed in this view.
 3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

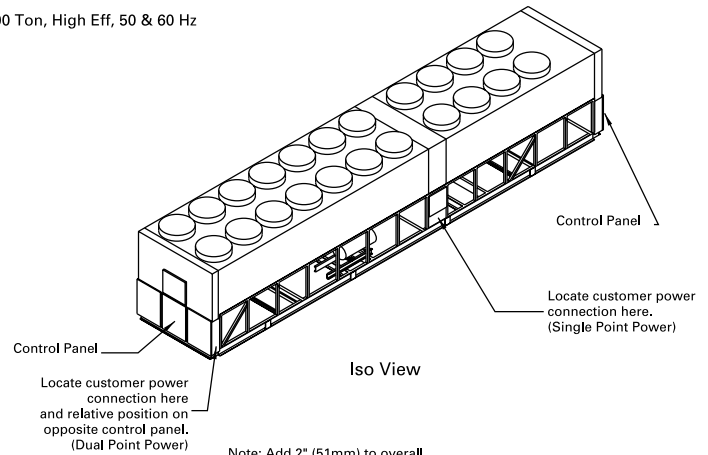
Dimensional Data

300 Ton, High Eff, 50 & 60 Hz

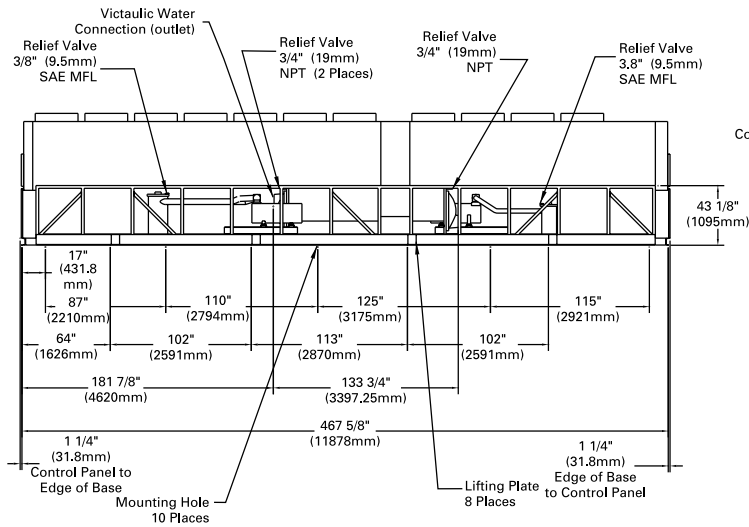
Mounting Hole Diameter: 3/4" (19.1mm)
Water Connection Diameter: 8" (203mm)
Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)



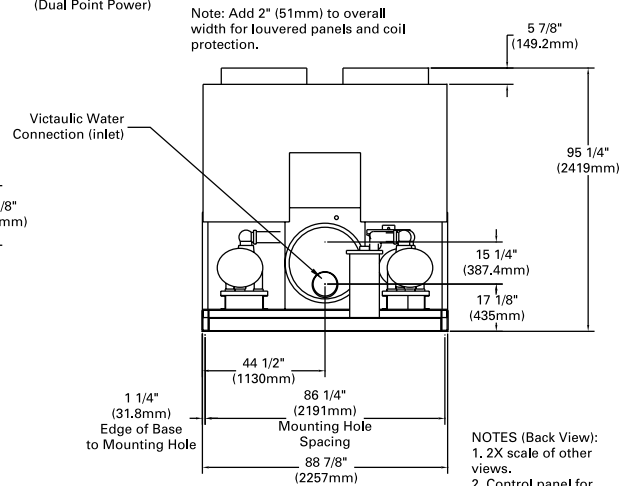
Top (Plan) View



Iso View



Side View



Back View

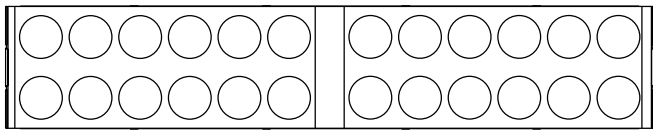
NOTES (Back View):
1. 2X scale of other views.
2. Control panel for circuit #2 removed in this view.
3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

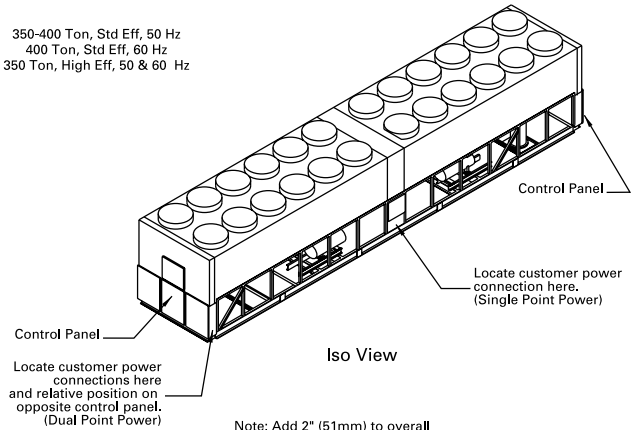
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
Water Connection Diameter: 8" (203mm)
Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)

350-400 Ton, Std Eff, 50 Hz
400 Ton, Std Eff, 60 Hz
350 Ton, High Eff, 50 & 60 Hz

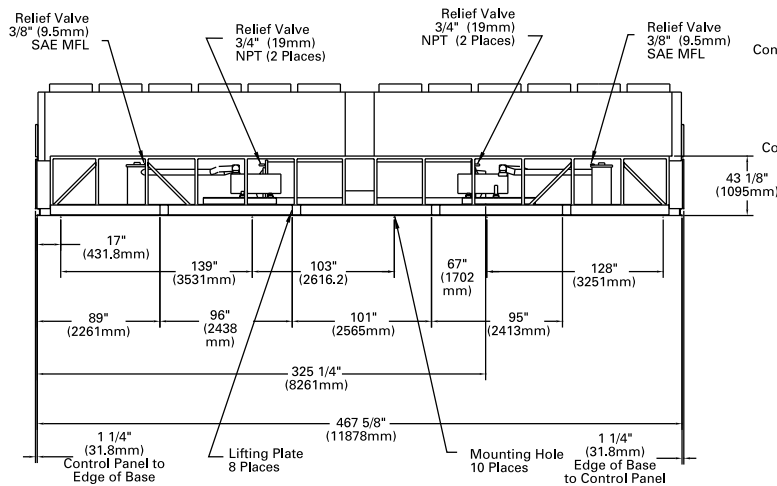


Top (Plan) View

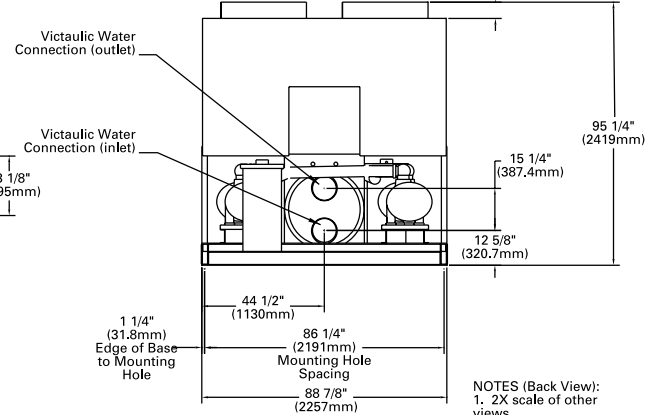


Iso View

Note: Add 2" (51mm) to overall width for louvered panels and coil protection.



Side View



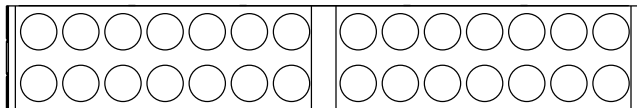
Back View

NOTES (Back View):
1. 2X scale of other views.
2. Control panel for circuit #2 removed in this view.
3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

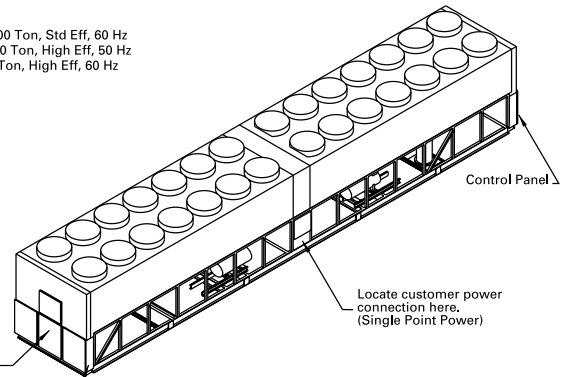
Dimensional Data

Mounting Hole Diameter: 3/4" (19.1mm)
 Water Connection Diameter: 8" (203mm)
 Lifting Plate Dimensions: 7 1/2" x 6" (191mm x 152mm)



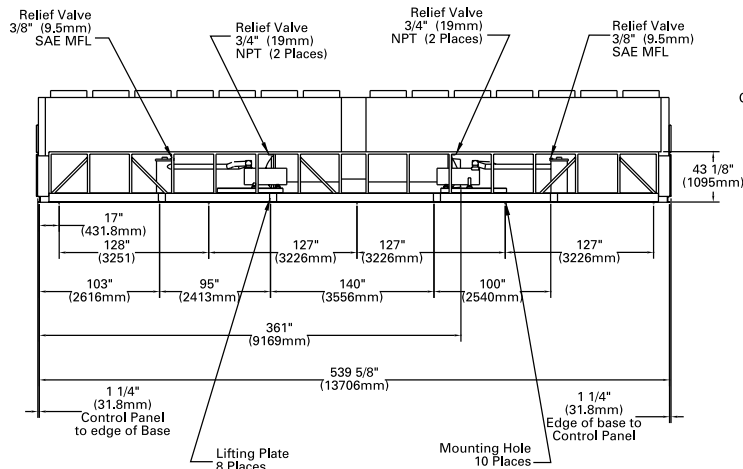
Top (Plan) View

450-500 Ton, Std Eff, 60 Hz
 375-400 Ton, High Eff, 50 Hz
 400 Ton, High Eff, 60 Hz

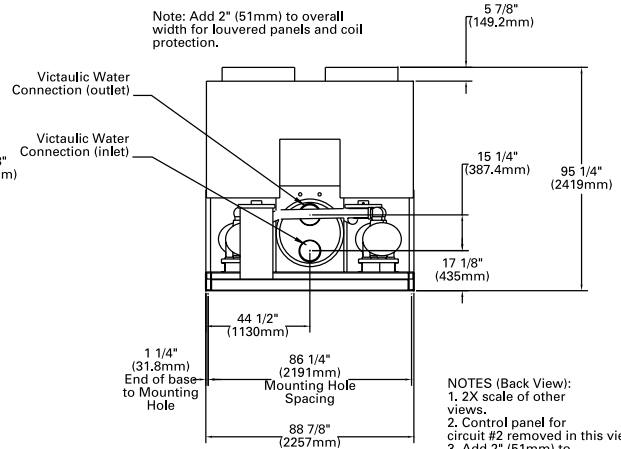


Iso View

Locate customer power connections here and relative position on opposite control panel. (Dual Point Power)



Side View



Back View

NOTES (Back View):
 1. 2X scale of other views.
 2. Control panel for circuit #2 removed in this view.
 3. Add 2" (51mm) to overall width for louvered panels and coil protection.

Minimum clearances are 4 feet to each side of the unit and National Electric Code Article 110-26 requirements for control panel clearances on both ends.

Field Wiring, 2-Compressor Units



Wiring and Layout

Field Wiring Notes, 2-Compressor Units

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
3. CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
4. THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
LOW VOLTAGE OPTIONS (CLASS 2)
TRACER COMMUNICATION INTERFACE
ICE MAKING START/STOP
EXTERNAL CURENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
115 VOLT OPTIONS FOR 60HZ UNITS OR 220 VOLT OPTIONS FOR 50HZ UNITS.
ICE MAKING STATUS
UNIT OPERATING STATUS MODULE
EVAPORATOR HEATER (FREEZE PROTECTION). STANDARD WITH UNIT-
MOUNTED EVAPORATOR. NOT USED WITH REMOTE EVAPORATOR OPTION.
CONVENIENCE OUTLET
LINE VOLTAGE OPTIONS
UNIT MOUNTED TERMINAL BLOCK, DISCONNECT SWITCH OR HACR CIRCUIT BREAKER (TB, SW OR CB)
19. SINGLE SOURCE POWER IS PROVIDED AS STANDARD. DUAL SOURCE POWER IS AVAILABLE AS AN OPTION. COMPONENTS 1CB2, 1TB2 & 1SW2 ARE PROVIDED ONLY WITH THE DUAL SOURCE POWER OPTION. IF SINGLE SOURCE POWER IS PROVIDED, 1CB1, 1SW1 OR 1TB1 MAY BE MOUNTED VERTICALLY OR HORIZONTALLY. REQUIRED PHASING FOR HORIZONTAL ARRANGEMENT IS SHOWN. SEE INSET A FOR CORRECT PHASING WHEN THE NOTED COMPONENTS ARE MOUNTED VERTICALLY.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
7. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN THE ADJACENT TABLE.
8. POWER FOR THE EVAPORATOR HEATER AND/OR OPTIONAL CONVENIENCE OUTLET IS SUPPLIED BY A COMMON CUSTOMER PROVIDED POWER SUPPLY. WHEN POWERED, THE HEAT TAPE WILL USE 1640 VA OF THE TOTAL AVAILABLE SUPPLY ON 60 HZ UNITS AND APPROXIMATELY 1390 VA ON 50 HZ UNITS. EVAPORATOR HEATERS ARE NOT PROVIDED WITH REMOTE EVAPORATOR UNITS.
9. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
10. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.
11. SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.
12. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
13. AS SHIPPED THE NORMAL 400 VOLT UNIT CONTROL POWER TRANSFORMERS ARE WIRED ON THE 400 VOLT TAP (H3). TRANSFORMER LEADS 126A & 126B SHOULD BE RECONNECTED TO THE APPROPRIATE TAP FOR THE 380 (H2) OR 415 (H4) VOLT POWER SUPPLIES.
14. GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15. UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.
16. CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
17. FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.
18. THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.

Wiring and Layout

Field Layout, 2-Compressor Units

⚠ WARNING

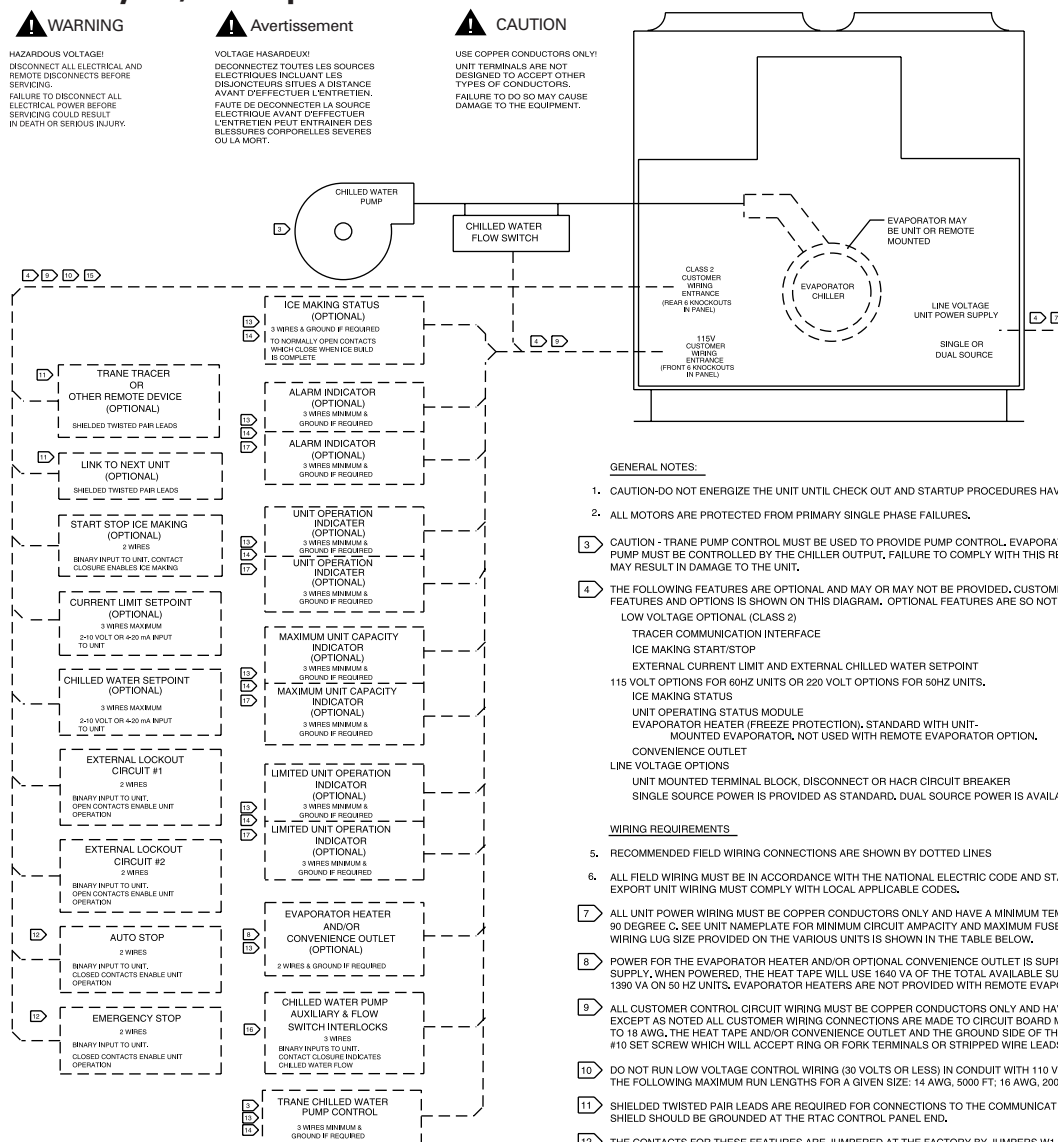
HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRICAL AND
REMOTE DISCONNECTS BEFORE
SERVICING.
FAILURE TO DISCONNECT ALL
ELECTRICAL POWER BEFORE
SERVICING COULD RESULT
IN DEATH OR SERIOUS INJURY.

⚠ Avertissement

VOLTAGE HASARDEUX!
DECONNECTEZ TOUTES LES SOURCES
ELECTRIQUES INCLUANT LES
DISJONCTEURS SITUES A DISTANCE
AVANT D'EXECUTER L'ENTRETIEN.
FAUTE DE DECONNECTER LA SOURCE
ELECTRIQUE AVANT D'EXECUTER
L'ENTRETIEN PEUT ENTRAINER DES
BLESSURES CORPORELLES SEVERES
OU LA MORT.

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT
DESIGNED TO ACCEPT OTHER
TYPES OF CONDUCTORS.
FAILURE TO DO SO MAY CAUSE
DAMAGE TO THE EQUIPMENT.



GENERAL NOTES:

- CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
- ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
- CAUTION - TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
- THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
LOW VOLTAGE OPTIONAL (CLASS 2)
TRACER COMMUNICATION INTERFACE
ICE MAKING START/STOP
EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
115 VOLT OPTIONS FOR 60HZ UNITS OR 220 VOLT OPTIONS FOR 50HZ UNITS.
ICE MAKING STATUS
UNIT OPERATING STATUS MODULE
EVAPORATOR HEATER (FREEZE PROTECTION), STANDARD WITH UNIT-MOUNTED EVAPORATOR, NOT USED WITH REMOTE EVAPORATOR OPTION.
CONVENIENCE OUTLET
LINE VOLTAGE OPTIONS
UNIT MOUNTED TERMINAL BLOCK, DISCONNECT OR HACR CIRCUIT BREAKER
SINGLE SOURCE POWER IS PROVIDED AS STANDARD. DUAL SOURCE POWER IS AVAILABLE AS AN OPTION.

WIRING REQUIREMENTS

- RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
- ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
- ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN THE TABLE BELOW.
- POWER FOR THE EVAPORATOR HEATER AND/OR OPTIONAL CONVENIENCE OUTLET IS SUPPLIED BY A COMMON CUSTOMER PROVIDED POWER SUPPLY. WHEN POWERED, THE HEAT TAPE WILL USE 1640 VA OF THE TOTAL AVAILABLE SUPPLY ON 60HZ UNITS AND APPROXIMATELY 1590 VA ON 50 HZ UNITS. EVAPORATOR HEATERS ARE NOT PROVIDED WITH REMOTE EVAPORATOR UNITS.
- ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
- DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT
- SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8), THE SHIELD SHOULD BE GROUND AT THE RTAC CONTROL PANEL END.
- THE CONTACTS FOR THESE FEATURES ARE JUMPED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE NOTED JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
- FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR EVAPORATOR HEATER AND CONVENIENCE OUTLET IS 20 AMPS ON 115 VOLT 60HZ PRODUCTS AND 15 AMPS ON 220 VOLT 50 HZ PRODUCTS. THE MAX FUSE SIZE FOR ALL OTHER FIELD PROVIDED CIRCUITS IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

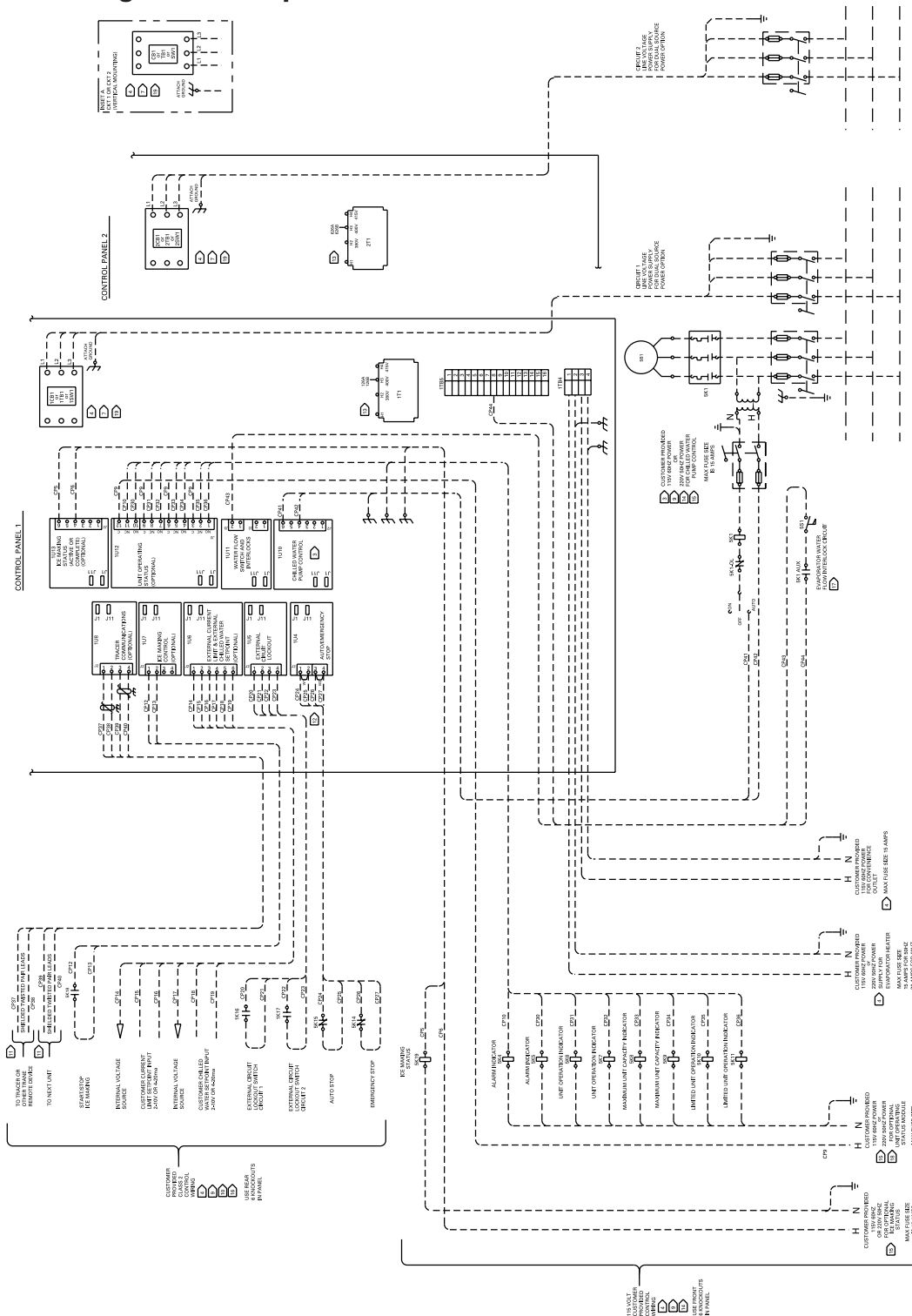
CONTACT RATINGS AND REQUIREMENTS

- UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL. THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.
- CUSTOMER SUPPLIED CONTACTS FOR ALL CLASS 2 CONNECTIONS MUST BE COMPATIBLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
- FLOW SWITCH & INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1 mA CIRCUIT OR A 220 VOLT 2 mA CIRCUIT.
- THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE INDICATOR FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.
THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.
THE NORMALLY OPEN CONTACTS ON EACH RELAY OPERATE AS FOLLOWS:
CONTACTS TO THE ALARM INDICATOR CLOSE ON A UNIT MALFUNCTION.
CONTACTS TO THE UNIT OPERATION INDICATOR CLOSE WHEN ANY COMPRESSOR IS RUNNING.
CONTACTS TO THE MAX UNIT CAPACITY INDICATOR CLOSE WHEN ALL UNIT COMPRESSORS ARE FULLY LOADED.
CONTACTS TO THE LIMITED UNIT OPERATION INDICATOR CLOSE IF NORMAL UNIT OPERATION IS RESTRICTED BY SOME OPERATING PARAMETER.



Wiring and Layout

Field Wiring, 3- & 4-Compressor Units, Dual-Point Power



Wiring and Layout

Field Wiring Notes, 3- & 4-Compressor Units, Dual-Point Power

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
3. CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDED PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
4. THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
 - LOW VOLTAGE OPTIONS (CLASS 2)
 - TRACER COMMUNICATION INTERFACE
 - ICE MAKING START/STOP
 - EXTERNAL CURENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
 - 115 VOLT OPTIONS FOR 60HZ, OR 220 VOLT OPTIONS FOR 50HZ.
 - ICE MAKING STATUS
 - UNIT OPERATING STATUS MODULE
 - EVAPORATOR HEATER (FREEZE PROTECTION), STANDARD WITH UNIT MOUNTED EVAPORATOR, NOT USED WITH REMOTE EVAPORATOR OPTION.
 - CONVENIENCE OUTLET OPTION IS AVAILABLE ONLY ON 60HZ UNITS.
19. LINE VOLTAGE OPTIONS
 - SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED. THIS DRAWING COVERS THE DUAL SOURCE POWER OPTION.
 - WHEN SPECIFIED CUSTOMER POWER WIRING CONNECTIONS ARE MADE TO CIRCUIT 1 (CONTROL PANEL 1) AND CIRCUIT 2 (CONTROL PANEL 2), AVAILABLE OPTIONS IN PANELS 1 & 2 FOR CUSTOMER WIRING TERMINATION INCLUDE TERMINAL BLOCKS, DISCONNECT SWITCHES OR HACR TYPE CIRCUIT BREAKERS. (TB, SW, CB)
 - THE NOTED WIRE TERMINATION DEVICES MAY BE MOUNTED VERTICALLY OR HORIZONTALLY. SEE INSET A FOR CORRECT PHASING WHEN THE DEVICES ARE MOUNTED VERTICALLY.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES.
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
7. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN CHART DRAWING 2309-2246.
9. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
10. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT
11. SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDDED AT THE RTAC CONTROL PANEL END.
12. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
13. AS SHIPPED THE NORMAL 400 VOLT UNIT CONTROL POWER TRANSFORMERS ARE WIRED ON THE 400 VOLT TAP (H3). TRANSFORMER LEADS 126A & 126B SHOULD BE RECONNECTED TO THE APPROPRIATE TAP FOR THE 380 (H2) OR 415 (H4) VOLT POWER SUPPLIES.
14. GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15. UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.
16. CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
17. FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.
18. THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.

REPLACEMENT FUSE SIZES

FUSE PROTECT FUNCTION	UNIT SIZE	UNIT VOLTAGE	DESIGNATION	VOLTS	CLASS	AMPS
CONDENSER FANS	250 TO 500	ALL	1F1-1F6/1F23-1F28/2F7-2F12/2F23-2F28	600	CLASS	40
CONTROL POWER TRANSFORMER PRIMARY		200/60	1F13,1F14/2F13,2F14		CC	6,25
		230/60				6
		380/60				3,5
		460/60				5
		575/60				4
		400/50				5
CONTROL POWER TRANSFORMER 115 VOLT SEC.		ALL	1F15/2F15			10
CONTROL POWER TRANSFORMER 24 VOLT SEC.		ALL	1F16/2F16			5
INVERTER DRIVE AND OR INVERTER TRANSFORMER PRI		380/60	1F17-1F22/2F17-2F22			9
		460/60,400/50				10
		575/60				6,25



Wiring and Layout

Field Wiring Notes, 3- & 4-Compressor Units, Single-Point Power

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
3. CAUTION-TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL. EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
4. THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
 - LOW VOLTAGE OPTIONS (CLASS 2)
 - TRACER COMMUNICATION INTERFACE
 - ICE MAKING START/STOP
 - EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
 - 115 VOLT OPTIONS FOR 60HZ, OR 220 VOLT OPTIONS FOR 50HZ.
 - ICE MAKING STATUS
 - UNIT OPERATING STATUS MODULE
 - EVAPORATOR HEATER (FREEZE PROTECTION), STANDARD WITH UNIT MOUNTED EVAPORATOR, NOT USED WITH REMOTE EVAPORATOR OPTION.
 - CONVENIENCE OUTLET IS AVAILABLE ONLY ON 60HZ UNITS.
19. LINE VOLTAGE OPTIONS
 - SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED. THIS DRAWING COVERS THE SINGLE SOURCE POWER OPTION.
 - WHEN SINGLE SOURCE POWER IS SPECIFIED AN ADDITIONAL PANEL IS PROVIDED FOR FIELD POWER WIRING. THIS PANEL IS AVAILABLE ONLY WITH TERMINAL BLOCKS OR LUGS. IN THIS CASE CONTROL PANELS 1 AND 2 ARE ALWAYS PROVIDED WITH A SINGLE HACR TYPE CIRCUIT BREAKER.

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
7. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN ON DRAWING 2309-2246.
9. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
10. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000FT
11. SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.
12. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
13. AS SHIPPED THE NORMAL 400 VOLT UNIT CONTROL POWER TRANSFORMERS ARE WIRED ON THE 400 VOLT TAP (H3). TRANSFORMER LEADS 126A & 126B SHOULD BE RECONNECTED TO THE APPROPRIATE TAP FOR THE 380 (H2) OR 415 (H4) VOLT POWER SUPPLIES.
14. GROUND ALL CUSTOMER PROVIDED 115 VOLT POWER SUPPLIES AS REQUIRED BY CODES. GREEN GROUND SCREWS ARE PROVIDED IN THE UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

15. UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS & THE ICE MAKING STATUS RELAY (1U10, 1U12, & 1U13) ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ. CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS. THE MAX FUSE SIZE FOR ANY OF THESE CIRCUITS IS 15 AMPS.
16. CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
17. FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT, OR A 220 VOLT 2mA CIRCUIT.
18. THE FIELD PROVIDED INDICATORS MAY BE RELAYS (AS SHOWN), LIGHTS OR AUDIBLE DEVICES. FOUR DUPLICATE FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.

THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. DEFAULT FUNCTIONS ARE SHOWN. SEE IOM FOR DETAILS.

REPLACEMENT FUSE SIZES						
FUSE PROTECT FUNCTION	UNIT SIZE	UNIT VOLTAGE	DESIGNATION	VOLTS	CLASS	AMPS
CONDENSER FANS	250 TO 500	ALL	1F1-1F6/1F23-1F28/2F7-2F12/2F23-2F28	600	R	40
CONTROL POWER TRANSFORMER PRIMARY		200/60	1F13,1F14/2F13,2F14		CC	6.25
		230/60				6
		380/60				3.5
		460/60				5
		575/60				4
		400/50				5
CONTROL POWER TRANSFORMER 115 VOLT SEC.		ALL	1F15/2F15			10
CONTROL POWER TRANSFORMER 24 VOLT SEC.		ALL	1F16/2F16			5
INVERTER DRIVE AND OR INVERTER TRANSFORMER PRI.		380/60	1F17-1F22/2F17-2F22			9
		460/60, 400/50				10
		575/60				6.25

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.



The diagram illustrates the RTAC unit from three perspectives: front view (left), side view (middle), and top view (right). The front view shows two control panels, labeled 'CONTROL PANEL 1' and 'CONTROL PANEL 2', with various components and wiring connections. The side view shows the unit's profile with a 'CHILLED WATER PUMP' and 'CHILLED WATER FLOW SWITCH' connected to the bottom. The top view shows the unit's layout with a 'CONTROL PANEL 1' and 'CONTROL PANEL 2' and a 'TYPICAL RTAC UNIT' label. The diagram includes numerous labels for components and wiring, such as 'ICE MAKING STATUS', 'ALARM INDICATOR', 'UNIT FREASIN INDICATOR', 'MAXIMUM UNIT CAPACITY', 'UNITED UNIT OPERATION', 'EXTERNAL LOCKOUT', 'AUTO STOP', and 'EMERGENCY STOP'. It also shows wiring connections for 'DIRECT FILL', 'EVAPORATOR HEATER', 'CHILLED WATER PUMP', and 'CHILLED WATER FLOW SWITCH'.

Wiring and Layout

Field Layout Notes, 3- & 4-Compressor Units

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. ALL MOTORS ARE PROTECTED FROM PRIMARY SINGLE PHASE FAILURES.
- 3 CAUTION- TRANE PUMP CONTROL MUST BE USED TO PROVIDE PUMP CONTROL, EVAPORATOR CHILLED WATER PUMP MUST BE CONTROLLED BY THE CHILLER OUTPUT, FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN DAMAGE TO THE UNIT.
- 4 THE FOLLOWING FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED, CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
 LOW VOLTAGE OPTIONAL (CLASS 2)
 TRACER COMMUNICATION INTERFACE
 ICE MAKING START/STOP
 EXTERNAL CURRENT LIMIT AND EXTERNAL CHILLED WATER SETPOINT
 115 VOLT OPTIONS FOR 60HZ UNITS, OR 220 VOLT OPTIONS FOR 50HZ,
 ICE MAKING STATUS
 UNIT OPERATING STATUS MODULE
 EVAPORATOR HEATER (FREEZE PROTECTION), STANDARD WITH UNIT MOUNTED EVAPORATOR, NOT USED WITH REMOTE EVAPORATOR OPTION.
 CONVENIENCE OUTLET OPTION IS AVAILABLE ONLY ON 60HZ UNITS.
- 19 LINE VOLTAGE OPTIONS
 SINGLE OR DUAL SOURCE POWER MAY BE SPECIFIED
 WHEN SINGLE SOURCE POWER IS SPECIFIED AN ADDITIONAL PANEL IS PROVIDED FOR FIELD POWER WITING, THIS PANEL IS AVAILABLE ONLY WITH TERMINAL BLOCKS OR LUGS, IN THIS CASE CONTROL PANELS 1 AND 2 ARE ALWAYS PROVIDED WITH A SINGLE HACR TYPE CIRCUIT BREAKER.
 WHEN DUAL SOURCE POWER IS SPECIFIED CUSTOMER POWER WIRING CONNECTIONS ARE MADE TO CIRCUIT 1 (CONTROL PANEL 1) AND TO CIRCUIT 2 (CONTROL PANEL 2), AVAILABLE OPTIONS IN PANELS 1 & 2 FOR CUSTOMER WIRING TERMINATION INCLUDE TERMINAL BLOCKS, DISCONNECT SWITCHES OR HACR TYPE CIRCUIT BREAKERS. (TB, SW, CB).

WIRING REQUIREMENTS

5. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DOTTED LINES.
6. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
- 7 ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 90 DEGREE C. SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS, THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN ON DRAWING 2309-2246.
- 9 ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG. THE HEAT TAPE AND/OR CONVENIENCE OUTLET AND THE GROUND SIDE OF THE FLOW SWITCH GO TO TERMINAL STRIPS WITH A #10 SET SCREW WHICH WILL ACCEPT RING OR FORK TERMINALS OR STRIPPED WIRE LEADS.
- 10 DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.
- 11 SHIELDED TWISTED PAIR LEADS ARE REQUIRED FOR CONNECTIONS TO THE COMMUNICATIONS INTERFACE MODULE (1U8). THE SHIELD SHOULD BE GROUNDED AT THE RTAC CONTROL PANEL END.
- 12 THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF IF REMOTE CONTROL IS DESIRED REMOVE THE NOTED JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
- 13 FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED, THE MAX FUSE SIZE FOR EVAPORATOR HEATER IS 20 AMPS ON 115 VOLT 60HZ PRODUCTS AND 15 AMPS ON 220 VOLT 50 HZ PRODUCTS. THE MAX FUSE SIZE FOR ALL OTHER FIELD PROVIDED CIRCUITS IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.

CONTACT RATINGS AND REQUIREMENTS

- 14 UNIT PROVIDED DRY CONTACTS FOR THE EVAPORATOR PUMP CONTROL, THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.
- 15 CUSTOMER SUPPLIED CONTACTS FOR ALL CLASS 2 CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
- 16 FLOW SWITCH & INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1 mA CIRCUIT OR A 220 VOLT 2 mA CIRCUIT.
- 17 THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES, FOUR DUPLICATE INDICATOR FUNCTIONS ARE SHOWN. THE DUPLICATE FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.
 THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.
 THE NORMALLY OPEN CONTACTS ON EACH RELAY OPERATE AS FOLLOWS:
 CONTACTS TO THE ALARM INDICATOR CLOSE ON A UNIT MALFUNCTION.
 CONTACTS TH THE UNIT OPERATION INDICATOR CLOSE WHEN ANY COMPRESSOR IS RUNNING.
 CONTACTS TO THE MAX UNIT CAPACITY INDICATOR CLOSE WHEN ALL UNIT COMPRESSORS ARE FULLY LOADED.
 CONTACTS TO THE LIMITED UNIT OPERATION INDICATOR CLOSE IF NORMAL UNIT OPERATION IS RESTRICTED BY SOME OPERATING PARAMETER.

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

Use Copper Conductors Only!

Unit terminals are not designed to accept other types of conductors. Failure to use copper conductors may result in equipment damage.



Weights

Table W-1 — Aluminum Fin Unit Weights (60 Hz Units)

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	1479	1479	1414	1414	1340	1340	1265	1265	n/a	n/a	10993	10700
	kg	671	671	641	641	608	608	574	574	n/a	n/a	4986	4854
RTAC 140 HIGH	lbs.	1522	1522	1457	1457	1383	1383	1308	1308	n/a	n/a	11339	11000
	kg	690	690	661	661	627	627	593	593	n/a	n/a	5143	4990
RTAC 155 STD	lbs.	1519	1519	1446	1446	1363	1363	1279	1279	n/a	n/a	11214	10900
	kg	689	689	656	656	618	618	580	580	n/a	n/a	5087	4944
RTAC 155 HIGH	lbs.	1739	1739	1683	1683	1593	1593	1505	1505	n/a	n/a	13047	12700
	kg	789	789	763	763	723	723	683	683	n/a	n/a	5918	5761
RTAC 170 STD	lbs.	1519	1519	1456	1456	1383	1383	1311	1311	n/a	n/a	11335	11000
	kg	689	689	660	660	627	627	595	595	n/a	n/a	5142	4990
RTAC 170 HIGH	lbs.	1757	1757	1757	1702	1615	1615	1529	1529	n/a	n/a	13261	12900
	kg	797	797	797	772	733	733	694	694	n/a	n/a	6015	5851
RTAC 185 STD	lbs.	1778	1770	1724	1715	1637	1629	1551	1543	n/a	n/a	13346	13000
	kg	807	803	782	778	743	739	704	700	n/a	n/a	6054	5897
RTAC 185 HIGH	lbs.	1524	1517	1492	1484	1435	1427	1382	1374	1329	1322	14290	13900
	kg	691	688	677	673	651	647	627	623	603	600	6482	6305
RTAC 200 STD	lbs.	1803	1803	1747	1747	1659	1659	1571	1571	n/a	n/a	13561	13200
	kg	818	818	792	792	753	753	713	713	n/a	n/a	6151	5988
RTAC 200 HIGH	lbs.	1564	1564	1531	1531	1474	1474	1420	1420	1367	1367	14717	14200
	kg	709	709	694	694	669	669	644	644	620	620	6676	6441
RTAC 225 STD	lbs.	1587	1512	1556	1481	1499	1424	1447	1372	1395	1320	14591	14200
	kg	720	686	706	672	680	646	656	622	633	599	6618	6441
RTAC 225 HIGH	lbs.	1609	1609	1596	1596	1586	1586	1574	1574	1567	1567	15865	15447
	kg	730	730	724	724	719	719	714	714	711	711	7196	7007
RTAC 250 STD	lbs.	1575	1575	1542	1542	1484	1484	1430	1430	1376	1376	14817	14400
	kg	714	714	699	699	673	673	649	649	624	624	6721	6532
RTAC 250 HIGH	lbs.	1613	1613	1600	1600	1590	1590	1578	1578	1571	1571	15903	15485
	kg	732	732	726	726	721	721	716	716	713	713	7214	7024
RTAC 275 STD	lbs.	1992	1456	1938	1955	1873	1890	2255	1825	2187	1770	19142	18639
	kg	904	660	879	887	850	857	1023	828	992	803	8683	8455
RTAC 275 HIGH	lbs.	2379	2093	2329	2053	2293	2024	2261	1998	2235	1978	21082	20491
	kg	1079	949	1056	931	1040	918	1026	906	1014	897	9563	9295
RTAC 300 STD	lbs.	2158	1907	2212	1950	2251	1981	2285	2009	2313	2030	21096	20544
	kg	979	865	1003	885	1021	899	1036	911	1049	921	9569	9319
RTAC 300 HIGH	lbs.	2504	2228	2475	2198	2443	2166	2415	2138	2392	2116	22515	21923
	kg	1136	1011	1123	997	1108	982	1095	970	1085	960	10213	9944
RTAC 350 STD	lbs.	2417	2142	2409	2133	2402	2127	2397	2121	2392	2117	22658	22066
	kg	1096	972	1093	968	1090	965	1087	962	1085	960	10278	10009
RTAC 350 HIGH	lbs.	2055	2055	2898	2898	2799	2799	2647	2647	2443	2442	25684	25009
	kg	932	932	1315	1315	1270	1270	1201	1201	1108	1108	11650	11344
RTAC 400 STD	lbs.	2544	2544	2610	2609	2644	2644	2696	2696	2767	2767	26523	25847
	kg	1154	1154	1184	1183	1199	1199	1223	1223	1255	1255	12031	11724
RTAC 400 HIGH	lbs.	3007	2960	2986	2940	2966	2920	2946	2900	2926	2879	29430	28652
	kg	1364	1343	1354	1334	1345	1325	1336	1315	1327	1306	13349	12997
RTAC 450 STD	lbs.	2751	2751	2797	2798	2843	2844	2890	2890	2936	2936	28436	27710
	kg	1248	1248	1269	1269	1290	1290	1311	1311	1332	1332	12899	12569
RTAC 500 STD	lbs.	3030	2984	3010	2963	2989	2943	2968	2922	2948	2901	29658	28880
	kg	1374	1354	1365	1344	1356	1335	1346	1325	1337	1316	13453	13100

Notes:

1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View

Control Panel	○	○	○	○	○
	2	4	6	8	10
	1	3	5	7	9
	○	○	○	○	○

Unit Top (Plan) View

Control Panel #1	○	○	○	○	○
	2	4	6	8	10
	1	3	5	7	9
	○	○	○	○	○
					Control Panel #2

Weights

Table W-1 — Aluminum Fin Unit Weights (50 Hz Units)

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	1477	1477	1413	1413	1340	1340	1266	1266	n/a	n/a	10993	10700
	kg	670	670	641	641	608	608	574	574	n/a	n/a	4986	4854
RTAC 140 HIGH	lbs.	1519	1519	1456	1456	1383	1383	1311	1311	n/a	n/a	11335	11000
	kg	689	689	660	660	627	627	595	595	n/a	n/a	5142	4990
RTAC 155 STD	lbs.	1535	1528	1463	1455	1379	1372	1295	1288	n/a	n/a	11314	11000
	kg	696	693	664	660	626	622	587	584	n/a	n/a	5132	4990
RTAC 155 HIGH	lbs.	1778	1770	1724	1715	1637	1629	1551	1543	n/a	n/a	13346	13000
	kg	807	803	782	778	743	739	704	700	n/a	n/a	6054	5897
RTAC 170 STD	lbs.	1590	1590	1519	1519	1437	1437	1355	1355	n/a	n/a	11805	11500
	kg	721	721	689	689	652	652	615	615	n/a	n/a	5355	5216
RTAC 170 HIGH	lbs.	1803	1803	1747	1747	1659	1659	1571	1571	n/a	n/a	13561	13200
	kg	818	818	792	792	753	753	713	713	n/a	n/a	6151	5988
RTAC 185 STD	lbs.	1849	1788	1797	1736	1715	1655	1633	1573	n/a	n/a	13746	13400
	kg	839	811	815	787	778	751	741	714	n/a	n/a	6235	6078
RTAC 185 HIGH	lbs.	1587	1512	1556	1481	1499	1424	1447	1372	1395	1320	14591	14200
	kg	720	686	706	672	680	646	656	622	633	599	6618	6441
RTAC 200 STD	lbs.	1803	1803	1747	1747	1659	1659	1572	1572	n/a	n/a	13563	13200
	kg	818	818	792	792	753	753	713	713	n/a	n/a	6152	5988
RTAC 200 HIGH	lbs.	1575	1575	1542	1542	1484	1484	1430	1430	1376	1376	14817	14300
	kg	714	714	699	699	673	673	649	649	624	624	6721	6486
RTAC 250 STD	lbs.	2056	1458	2007	1422	1948	1904	1889	1845	1839	1795	18163	17709
	kg	933	661	910	645	884	864	857	837	834	814	8239	8033
RTAC 250 HIGH	lbs.	1990	1460	1937	1961	1874	1898	2258	1835	2192	1782	19188	18636
	kg	903	662	879	890	850	861	1024	832	994	808	8704	8453
RTAC 275 STD	lbs.	1995	1467	1956	1985	1910	1939	2324	1892	2275	1853	19594	19091
	kg	905	665	887	900	866	880	1054	858	1032	841	8888	8660
RTAC 275 HIGH	lbs.	2257	2388	2313	1960	2352	1992	2388	2020	2417	2043	21570	20978
	kg	1024	1083	1049	889	1067	904	1083	916	1096	927	9784	9516
RTAC 300 STD	lbs.	2171	1919	2224	1961	2261	1991	2296	2019	2322	2040	21204	20652
	kg	985	870	1009	890	1026	903	1041	916	1053	925	9618	9368
RTAC 300 HIGH	lbs.	2517	2241	2487	2210	2453	2177	2424	2148	2401	2124	22623	22031
	kg	1142	1017	1128	1002	1113	987	1100	974	1089	963	10262	9993
RTAC 350 STD	lbs.	2325	2325	2381	2381	2410	2410	2455	2455	2515	2515	24171	23582
	kg	1055	1055	1080	1080	1093	1093	1114	1114	1141	1141	10964	10697
RTAC 350 HIGH	lbs.	2569	2569	2635	2635	2669	2669	2722	2722	2793	2793	26777	26102
	kg	1165	1165	1195	1195	1211	1211	1235	1235	1267	1267	12146	11840
RTAC 375 STD	lbs.	2447	2433	2269	2255	2175	2161	3051	3030	2760	2739	25321	24710
	kg	1110	1104	1029	1023	987	980	1384	1374	1252	1242	11486	11208
RTAC 375 HIGH	lbs.	2715	2710	2765	2760	2815	2810	2864	2859	2914	2909	28121	27395
	kg	1232	1229	1254	1252	1277	1275	1299	1297	1322	1320	12756	12426
RTAC 400 STD	lbs.	2567	2567	2632	2632	2667	2666	2719	2719	2791	2791	26751	26075
	kg	1164	1164	1194	1194	1210	1209	1233	1233	1266	1266	12134	11828
RTAC 400 HIGH	lbs.	3021	2975	3001	2955	2981	2934	2960	2914	2940	2893	29574	28796
	kg	1370	1349	1361	1340	1352	1331	1343	1322	1334	1312	13415	13062

Notes:

1. Operating weight includes refrigerant and water.

2. Shipping weight includes refrigerant.

3. All weights +/- 3%.

Unit Top (Plan) View

Control Panel	○	○	○	○	○
	2	4	6	8	10
	○	○	○	○	○
Control Panel	○	○	○	○	○
	1	3	5	7	9
	○	○	○	○	○

Unit Top (Plan) View

Control Panel #1	○	○	○	○	○
	2	4	6	8	10
	○	○	○	○	○
Control Panel #2	○	○	○	○	○
	1	3	5	7	9
	○	○	○	○	○



Weights

Table W-1 — Copper Fin Unit Weights (60 Hz Units)

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	1608	1608	1543	1543	1469	1469	1394	1394	n/a	n/a	12025	11732
	kg	729	729	700	700	666	666	632	632	n/a	n/a	5455	5322
RTAC 140 HIGH	lbs.	1671	1671	1606	1606	1532	1532	1457	1457	n/a	n/a	12531	12192
	kg	758	758	728	728	695	695	661	661	n/a	n/a	5684	5530
RTAC 155 STD	lbs.	1668	1648	1595	1575	1512	1492	1428	1408	n/a	n/a	12426	12012
	kg	757	748	723	714	686	677	648	639	n/a	n/a	5636	5449
RTAC 155 HIGH	lbs.	1918	1888	1862	1832	1772	1742	1684	1654	n/a	n/a	14357	14010
	kg	870	856	845	831	804	790	764	750	n/a	n/a	6512	6355
RTAC 170 STD	lbs.	1668	1668	1605	1605	1532	1532	1460	1460	n/a	n/a	12527	12192
	kg	757	757	728	728	695	695	662	662	n/a	n/a	5682	5530
RTAC 170 HIGH	lbs.	1936	1936	1936	1881	1794	1794	1708	1708	n/a	n/a	14638	14328
	kg	878	878	878	853	814	814	775	775	n/a	n/a	6640	6499
RTAC 185 STD	lbs.	1957	1919	1903	1864	1816	1778	1730	1692	n/a	n/a	14656	14310
	kg	888	870	863	846	824	807	785	767	n/a	n/a	6648	6491
RTAC 185 HIGH	lbs.	1691	1660	1659	1627	1602	1570	1549	1517	1496	1465	15838	15448
	kg	767	753	753	738	727	712	703	688	679	665	7184	7007
RTAC 200 STD	lbs.	1982	1982	1926	1926	1838	1838	1750	1750	n/a	n/a	14989	14628
	kg	899	899	874	874	834	834	794	794	n/a	n/a	6799	6635
RTAC 200 HIGH	lbs.	1731	1731	1698	1698	1641	1641	1587	1587	1534	1534	16385	15968
	kg	785	785	770	770	744	744	720	720	696	696	7432	7243
RTAC 225 STD	lbs.	1754	1655	1723	1624	1666	1567	1614	1515	1562	1463	14591	15748
	kg	796	751	782	737	756	711	732	687	709	664	6618	7143
RTAC 225 HIGH	lbs.	1823	1823	1792	1792	1770	1770	1741	1741	1724	1724	17702	17284
	kg	827	827	813	813	803	803	790	790	782	782	8030	7840
RTAC 250 STD	lbs.	1742	1742	1709	1709	1651	1651	1597	1597	1543	1543	16485	16068
	kg	790	790	775	775	749	749	724	724	700	700	7478	7288
RTAC 250 HIGH	lbs.	1827	1827	1796	1796	1773	1773	1745	1745	1728	1728	17740	17322
	kg	829	829	815	815	804	804	792	792	784	784	8047	7857
RTAC 275 STD	lbs.	1877	1884	2334	1878	2326	1871	2317	1864	2310	2318	20979	20476
	kg	851	855	1059	852	1055	849	1051	846	1048	1051	9516	9288
RTAC 275 HIGH	lbs.	2632	2047	2833	2180	2976	2276	2067	2362	2135	2429	23148	22556
	kg	1194	929	1285	989	1350	1032	938	1071	968	1102	10500	10231
RTAC 300 STD	lbs.	2449	1995	2319	2357	2226	2264	2142	2180	3117	2114	23162	22610
	kg	1111	905	1052	1069	1010	1027	972	989	1414	959	10506	10256
RTAC 300 HIGH	lbs.	2733	2445	2716	2433	2696	2420	2680	2409	2666	2400	24810	24218
	kg	1240	1109	1232	1104	1223	1098	1216	1093	1209	1089	11254	10985
RTAC 350 STD	lbs.	2643	2364	2637	2360	2632	2357	2628	2654	2625	2352	24953	24362
	kg	1199	1072	1196	1070	1194	1069	1192	1204	1191	1067	11319	11051
RTAC 350 HIGH	lbs.	2715	2714	2793	2793	2834	2834	2897	2897	2982	2982	28438	27763
	kg	1232	1231	1267	1267	1286	1286	1314	1314	1353	1353	12899	12593
RTAC 400 STD	lbs.	2797	2797	2876	2876	2918	2917	2981	2981	3067	3067	29277	28602
	kg	1269	1269	1305	1305	1324	1323	1352	1352	1391	1391	13280	12974
RTAC 400 HIGH	lbs.	3323	3277	3305	3259	3288	3241	3270	3223	3252	3206	32643	31866
	kg	1507	1486	1499	1478	1491	1470	1483	1462	1475	1454	14807	14454
RTAC 450 STD	lbs.	2979	2979	2817	2817	3520	3520	3305	3305	3089	3089	31420	30694
	kg	1351	1351	1278	1278	1597	1597	1499	1499	1401	1401	14252	13923
RTAC 500 STD	lbs.	3347	3300	3329	3282	3310	3264	3292	3246	3274	3227	32871	32094
	kg	1518	1497	1510	1489	1501	1481	1493	1472	1485	1464	14910	14558

- Notes:
 1. Operating weight includes refrigerant and water.
 2. Shipping weight includes refrigerant.
 3. All weights +/- 3%.

Unit Top (Plan) View

Control Panel	○	○	○	○	○
	2	4	6	8	10
	○	○	○	○	○
Control Panel	1	3	5	7	9
	○	○	○	○	○
	○	○	○	○	○

Unit Top (Plan) View

Control Panel #1	○	○	○	○	○
	2	4	6	8	10
	○	○	○	○	○
Control Panel #2	1	3	5	7	9
	○	○	○	○	○
	○	○	○	○	○

Weights

Table W-1 — Copper Fin Unit Weights (50 Hz Units)

Unit Size	Units	Isolator Location										Operating Weight	Shipping Weight
		1	2	3	4	5	6	7	8	9	10		
RTAC 140 STD	lbs.	1606	1606	1542	1542	1469	1469	1395	1395	n/a	n/a	12025	11732
	kg	728	728	699	699	666	666	633	633	n/a	n/a	5455	5322
RTAC 140 HIGH	lbs.	1668	1668	1605	1605	1532	1532	1460	1460	n/a	n/a	12527	12192
	kg	757	757	728	728	695	695	662	662	n/a	n/a	5682	5530
RTAC 155 STD	lbs.	1684	1657	1612	1584	1528	1501	1444	1417	n/a	n/a	12426	12112
	kg	764	752	731	719	693	681	655	643	n/a	n/a	5636	5494
RTAC 155 HIGH	lbs.	1957	1919	1903	1864	1816	1778	1730	1692	n/a	n/a	14656	14310
	kg	888	870	863	846	824	807	785	767	n/a	n/a	6648	6491
RTAC 170 STD	lbs.	1739	1739	1668	1668	1586	1586	1504	1504	n/a	n/a	12997	12692
	kg	789	789	757	757	719	719	682	682	n/a	n/a	5895	5757
RTAC 170 HIGH	lbs.	1982	1982	1926	1926	1838	1838	1750	1750	n/a	n/a	14989	14628
	kg	899	899	874	874	834	834	794	794	n/a	n/a	6799	6635
RTAC 185 STD	lbs.	2028	1937	1976	1885	1894	1804	1812	1722	n/a	n/a	15056	14710
	kg	920	879	896	855	859	818	822	781	n/a	n/a	6829	6672
RTAC 185 HIGH	lbs.	1754	1655	1723	1624	1666	1567	1614	1515	1562	1463	16139	15748
	kg	796	751	782	737	756	711	732	687	709	664	7321	7143
RTAC 200 STD	lbs.	1982	1982	1926	1926	1838	1838	1751	1751	n/a	n/a	14991	14628
	kg	899	899	874	874	834	834	794	794	n/a	n/a	6800	6635
RTAC 200 HIGH	lbs.	1742	1742	1709	1709	1651	1651	1597	1597	1543	1543	16485	16068
	kg	790	790	775	775	749	749	724	724	700	700	7478	7288
RTAC 250 STD	lbs.	1906	1911	1876	1881	2296	1846	2251	1810	2214	1780	19770	19316
	kg	865	867	851	853	1041	837	1021	821	1004	807	8968	8762
RTAC 250 HIGH	lbs.	1876	1888	2333	1884	2327	1879	2320	1873	2314	2330	21025	20472
	kg	851	856	1058	855	1056	852	1052	850	1050	1057	9537	9286
RTAC 275 STD	lbs.	1920	1851	2384	1842	2370	1831	2357	2270	2346	2259	21431	20928
	kg	871	840	1081	836	1075	831	1069	1030	1064	1025	9721	9493
RTAC 275 HIGH	lbs.	2619	2340	2591	2321	2571	2308	2553	2296	2539	2286	23636	23044
	kg	1188	1061	1175	1053	1166	1047	1158	1041	1152	1037	10721	10453
RTAC 300 STD	lbs.	2389	2087	2196	2409	2058	2271	2905	2147	2758	2049	23270	22718
	kg	1084	947	996	1093	934	1030	1318	974	1251	929	10555	10305
RTAC 300 HIGH	lbs.	2747	2458	2728	2445	2707	2431	2689	2419	2675	2409	24918	24326
	kg	1246	1115	1237	1109	1228	1103	1220	1097	1213	1093	11303	11034
RTAC 350 STD	lbs.	2536	2536	2603	2603	2638	2638	2692	2692	2765	2765	26466	25878
	kg	1150	1150	1181	1181	1197	1197	1221	1221	1254	1254	12005	11738
RTAC 350 HIGH	lbs.	3015	3015	2877	2877	2805	2805	2695	2695	3374	3374	29531	28856
	kg	1368	1368	1305	1305	1272	1272	1222	1222	1530	1530	13395	13089
RTAC 375 STD	lbs.	2199	2188	3034	3017	2893	2876	2677	2660	3161	3139	27846	27234
	kg	997	992	1376	1369	1312	1305	1214	1207	1434	1424	12631	12353
RTAC 375 HIGH	lbs.	2943	2939	2787	2783	3486	3481	3279	3273	3070	3064	31105	30379
	kg	1335	1333	1264	1262	1581	1579	1487	1485	1393	1390	14109	13780
RTAC 400 STD	lbs.	3012	3012	2875	2875	2803	2803	2692	2692	3371	3371	29505	28830
	kg	1366	1366	1304	1304	1271	1271	1221	1221	1529	1529	13383	13077
RTAC 400 HIGH	lbs.	3338	3292	3320	3274	3302	3256	3284	3238	3266	3219	32787	32010
	kg	1514	1493	1506	1485	1498	1477	1490	1469	1481	1460	14872	14520

Notes:

1. Operating weight includes refrigerant and water.
2. Shipping weight includes refrigerant.
3. All weights +/- 3%.

Unit Top (Plan) View

Control Panel	○	○	○	○	○
	2	4	6	8	10
	1	3	5	7	9
	○	○	○	○	○

Unit Top (Plan) View

Control Panel #1	○	○	○	○	○
	2	4	6	8	10
	1	3	5	7	9
	○	○	○	○	○
					Control Panel #2



Mechanical Specifications

General

Units are leak and pressure tested at 437 psig high side, 250 psig low side, then evacuated and charged. All Air-Cooled Series R Chillers are factory tested prior to shipment. Packaged units ship with a full operating charge of oil and refrigerant. Unit panels, structural elements and control boxes are constructed of 12-gauge galvanized steel and mounted on a welded structural steel base. Unit panels and control boxes are finished with a baked on powder paint, and the structural base with an air dry paint. All paint meets the requirement for outdoor equipment of the U.S. Navy and other federal government agencies.

Evaporator

The evaporator is a tube-in-shell heat exchanger design with internally and externally finned copper tubes roller expanded into the tube sheet. The evaporator is designed, tested and stamped in accordance with ASME for a refrigerant side working pressure of 200 psig. The evaporator is designed for a water side working pressure of 150 psig. Water connections are grooved pipe. Each shell includes a vent, a drain and fittings for temperature control sensors and is insulated with 3/4-inch (140-250) or 1 1/2-inch (275-500) Armaflex II or equal insulation ($K=0.26$). Evaporator heaters with thermostat are provided to help protect the evaporator from freezing at ambient temperatures down to -20°F.

Condenser and Fans

Air-cooled condenser coils have aluminum fins mechanically bonded to internally finned seamless copper tubing. The condenser coil has an integral subcooling circuit. Condensers are factory proof and leak tested at 506 psig. Direct-drive vertical discharge condenser fans are dynamically balanced. Three-phase condenser fan motors with permanently lubricated ball bearings and internal thermal overload protection are provided. Standard units will start and operate between 25 to 115°F/-4 to 46°C ambient.

Compressor and Lube Oil System

The rotary screw compressor is semi-hermetic, direct drive, 3600 rpm (60 Hz), 3000 rpm (50 Hz), with capacity control slide valve, a load/unload valve, rolling element bearings, differential refrigerant pressure oil pump and oil heater. The motor is a suction gas cooled, hermetically sealed, two-pole squirrel cage induction motor. Oil separator and filtration devices are provided separate from the compressor. Check valves in the compressor discharge and lube oil system and a solenoid valve in the lube system are also provided.

Refrigeration Circuits

Each unit has two refrigerant circuits, with one or two rotary screw compressors per circuit. Each refrigerant circuit includes a compressor suction and discharge service valve, liquid line shutoff valve, removable core filter, liquid line sight glass with moisture indicator, charging port and an electronic expansion valve. Fully modulating compressors and electronic expansion valves provide variable capacity modulation over the entire operating range.

Unit Controls

All unit controls are housed in an outdoor rated weathertight enclosure with removable plates to allow for customer connection of power wiring and remote interlocks. All controls, including sensors, are factory mounted and tested prior to shipment. Microcomputer controls provide all control functions including start-up and shut down, leaving chilled water temperature control, compressor and electronic expansion valve modulation, fan sequencing, anti-recycle logic, automatic lead/lag compressor starting and load limiting. The unit control module, utilizing Adaptive Control™ microprocessor, automatically takes action to avoid unit shutdown due to abnormal operating conditions associated with low refrigerant pressure, high condensing pressure and motor current overload. Should the abnormal operating condition continue until a

protective limit is violated, the unit will be shut down. Unit protective functions include loss of chilled water flow, evaporator freezing, loss of refrigerant, low refrigerant pressure, high refrigerant pressure, reverse rotation, compressor starting and running over current, phase loss, phase imbalance, phase reversal, and loss of oil flow. A digital display indicates chilled water setpoint and leaving chilled water temperature as standard. While current limit setpoint, evaporator and condenser refrigerant pressures, and electrical information are an option. Both standard and optional displays can be viewed on the unit without opening any control panel doors. Standard power connections include main three phase power to the compressors, condenser fans and control power transformer and optional connections are available for the 115 volt/60 Hz single phase power for freeze protection on the evaporator heaters.

Starters

Starters are housed in a weathertight enclosure with removable cover plate to allow for customer connection of power wiring. Across-the-line starters are standard on all 380-575/60 and 400/50 volt units. Wye Delta closed transition starters (33 percent of LRA inrush) are optional on 380-575/60 and 400/50 volt units and standard on 200-230/60 Hz volt units. Typically, Trane helical-rotary screw compressors are up to full speed in one second when started across-the-line and have equivalent inrush with similar size reciprocating compressor with part wind starters.

Chilled Water Reset

This provides the control logic and factory installed sensors to reset leaving chilled water temperature. The setpoint can be reset based on ambient temperature or return evaporator water temperature.

Flow Control

This provides the control logic and relays to turn the chilled water flow on and off as the chiller requires for operation and protection. This function is a requirement on the Air-Cooled Series R Chiller.

To Convert From:	To:	Multiply By:	To Convert From:	To:	Multiply By:
Length			Energy and Power and Capacity		
Feet (ft)	meters (m)	.30481	British Thermal Units (BTUH)	Kilowatt (kW)	.000293
Inches (In)	millimeters (mm)	25.4	British Thermal Units (BTU)	KCalorie (Kcal)	.252
Area			Tons (refrig. effect)	Kilowatt (refrig. effect)	3.516
Square Feet (ft ²)	square meters (m ²)	.093	Tons (refrig. effect)	Kilocalories per hour (Kcal/hr)	3024
Square Inches (In ²)	square millimeters (mm ²)	645.2	Horsepower	Kilowatt (kW)	.7457
Volume			Pressure		
Cubic Feet (ft ³)	Cubic meters (m ³)	.0283	Feet of water (ftH ₂ O)	Pascals (PA)	2990
Cubic Inches (In ³)	Cubic mm (mm ³)	16387	Inches of water (inH ₂ O)	Pascals (PA)	249
Gallons (gal)	litres (l)	3.785	Pounds per square inch (PSI)	Pascals (PA)	6895
Gallons (gal)	cubic meters (m ³)	.003785	PSI	Bar or KG/CM ²	6.895 × 10 ⁻²
Flow			Weight		
Cubic feet/min (cfm)	cubic meters/second (m ³ /s)	.000472	Ounces (oz)	Kilograms (kg)	.02835
Cubic feet/min (cfm)	cubic meters/hr (m ³ /hr)	1.69884	Pounds (lbs)	Kilograms (Kg)	.4536
Gallons/minute (GPM)	cubic meters/hr (m ³ /hr)	.2271	Fouling factors for heat exchangers		
Gallons/minute (GPM)	litres/second (l/s)	.06308	.00010 ft ² °F hr/BTU	= .0176 m ² ° K/kW	
Velocity			.00025 ft ² °F hr/BTU	= .044 m ² ° K/kW	
Feet per minute (ft/m)	meters per second (m/s)	.00508			
Feet per second (ft/s)	meters per second (m/s)	.3048			

Temperature — Centigrade (°C) Versus Fahrenheit (°F)

Note: The center columns of numbers, referred to as BASE TEMP., is the temperature in either degrees Fahrenheit (°F) or Centigrade (°C), whichever is desired to convert into the other. If degrees Centigrade is given, read degrees Fahrenheit to the right. If degrees Fahrenheit is given, read degrees Centigrade to the left.

Temperature			Temperature			Temperature			Temperature			Temperature		
°C	C or F	°F	°C	C or F	°F	°C	C or F	°F	°C	C or F	°F	°C	C or F	°F
-40.0	-40	-40.0	-15.0	+5	+41.0	+10.0	+50	+122.0	+35.0	+95	+203.0	+60.0	+140	+284.0
-39.4	-39	-38.2	-14.4	+6	+42.8	+10.6	+51	+123.8	+35.6	+96	+204.8	+60.6	+141	+285.8
-38.9	-38	-36.4	-13.9	+7	+44.6	+11.1	+52	+125.6	+36.1	+97	+206.6	+61.1	+142	+287.6
-38.3	-37	-34.6	-13.3	+8	+46.4	+11.7	+53	+127.4	+36.7	+98	+208.4	+61.7	+143	+289.4
-37.8	-36	-32.8	-12.8	+9	+48.2	+12.2	+54	+129.2	+37.2	+99	+210.2	+62.2	+144	+291.2
-37.2	-35	-31.0	-12.2	+10	+50.0	+12.8	+55	+131.0	+37.8	+100	+212.0	+62.8	+145	+293.0
-36.7	-34	-29.2	-11.7	+11	+51.8	+13.3	+56	+132.8	+38.3	+101	+213.8	+63.3	+146	+294.8
-36.1	-33	-27.4	-11.1	+12	+53.6	+13.9	+57	+134.6	+38.9	+102	+215.6	+63.9	+147	+296.6
-35.6	-32	-25.6	-10.6	+13	+55.4	+14.4	+58	+136.4	+39.4	+103	+217.4	+64.4	+148	+298.4
-35.0	-31	-23.8	-10.0	+14	+57.2	+15.0	+59	+138.2	+40.0	+104	+219.2	+65.0	+149	+300.2
-34.4	-30	-22.0	-9.4	+15	+59.0	+15.6	+60	+140.0	+40.6	+105	+221.0	+65.6	+150	+302.0
-33.9	-29	-20.2	-8.9	+16	+60.8	+16.1	+61	+141.8	+41.1	+106	+222.8	+66.1	+151	+303.8
-33.3	-28	-18.4	-8.3	+17	+62.6	+16.7	+62	+143.6	+41.7	+107	+224.6	+66.7	+152	+305.6
-32.8	-27	-16.6	-7.8	+18	+64.4	+17.2	+63	+145.4	+42.2	+108	+226.4	+67.2	+153	+307.4
-32.2	-26	-14.8	-7.2	+19	+66.2	+17.8	+64	+147.2	+42.8	+109	+228.2	+67.8	+154	+309.2
-31.7	-25	-13.0	-6.7	+20	+68.0	+18.3	+65	+149.0	+43.3	+110	+230.0	+68.3	+155	+311.0
-31.1	-24	-11.2	-6.1	+21	+69.8	+18.9	+66	+150.8	+43.9	+111	+231.8	+68.9	+156	+312.8
-30.6	-23	-9.4	-5.5	+22	+71.6	+19.4	+67	+152.6	+44.4	+112	+233.6	+69.4	+157	+314.6
-30.0	-22	-7.6	-5.0	+23	+73.4	+20.0	+68	+154.4	+45.0	+113	+235.4	+70.0	+158	+316.4
-29.4	-21	-5.8	-4.4	+24	+75.2	+20.6	+69	+156.2	+45.6	+114	+237.2	+70.6	+159	+318.2
-28.9	-20	-4.0	-3.9	+25	+77.0	+21.1	+70	+158.0	+46.1	+115	+239.0	+71.1	+160	+320.0
-28.3	-19	-2.2	-3.3	+26	+78.8	+21.7	+71	+159.8	+46.7	+116	+240.8	+71.7	+161	+321.8
-27.8	-18	-0.4	-2.8	+27	+80.6	+22.2	+72	+161.6	+47.2	+117	+242.6	+72.2	+162	+323.6
-27.2	-17	+1.4	-2.2	+28	+82.4	+22.8	+73	+163.4	+47.8	+118	+244.4	+72.8	+163	+325.4
-26.7	-16	+3.2	-1.7	+29	+84.2	+23.3	+74	+165.2	+48.3	+119	+246.2	+73.3	+164	+327.2
-26.1	-15	+5.0	-1.1	+30	+86.0	+23.9	+75	+167.0	+48.9	+120	+248.0	+73.9	+165	+329.0
-25.6	-14	+6.8	-0.6	+31	+87.8	+24.4	+76	+168.8	+49.4	+121	+249.8	+74.4	+166	+330.8
-25.0	-13	+8.6	.0	+32	+89.6	+25.0	+77	+170.6	+50.0	+122	+251.6	+75.0	+167	+332.6
-24.4	-12	+10.4	+0.6	+33	+91.4	+25.6	+78	+172.4	+50.6	+123	+253.4	+75.6	+168	+334.4
-23.9	-11	+12.2	+1.1	+34	+93.2	+26.1	+79	+174.2	+51.1	+124	+255.2	+76.1	+169	+336.2
-23.3	-10	+14.0	+1.7	+35	+95.0	+26.7	+80	+176.0	+51.7	+125	+257.0	+76.7	+170	+338.0
-22.8	-9	+15.8	+2.2	+36	+96.8	+27.2	+81	+177.8	+52.2	+126	+258.8	+77.2	+171	+339.8
-22.2	-8	+17.6	+2.8	+37	+98.6	+27.8	+82	+179.6	+52.8	+127	+260.6	+77.8	+172	+341.6
-21.7	-7	+19.4	+3.3	+38	+100.4	+28.3	+83	+181.4	+53.3	+128	+262.4	+78.3	+173	+343.4
-21.1	-6	+21.2	+3.9	+39	+102.2	+28.9	+84	+183.2	+53.9	+129	+264.2	+78.9	+174	+345.2
-20.6	-5	+23.0	+4.4	+40	+104.0	+29.4	+85	+185.0	+54.4	+130	+266.0	+79.4	+175	+347.0
-20.0	-4	+24.8	+5.0	+41	+105.8	+30.0	+86	+186.8	+55.0	+131	+267.8	+80.0	+176	+348.8
-19.4	-3	+26.6	+5.5	+42	+107.6	+30.6	+87	+188.6	+55.6	+132	+269.6	+80.6	+177	+350.6
-18.9	-2	+28.4	+6.1	+43	+109.4	+31.1	+88	+190.4	+56.1	+133	+271.4	+81.1	+178	+352.4
-18.3	-1	+30.2	+6.7	+44	+111.2	+31.7	+89	+192.2	+56.7	+134	+273.2	+81.7	+179	+354.2
-17.8	0	+32.0	+7.2	+45	+113.0	+32.2	+90	+194.0	+57.2	+135	+275.0	+82.2	+180	+356.0
-17.2	+1	+33.8	+7.8	+46	+114.8	+32.8	+91	+195.8	+57.8	+136	+276.8	+82.8	+181	+357.8
-16.7	+2	+35.6	+8.3	+47	+116.6	+33.3	+92	+197.6	+58.3	+137	+278.6	+83.3	+182	+359.6
-16.1	+3	+37.4	+8.9	+48	+118.4	+33.9	+93	+199.4	+58.9	+138	+280.4	+83.9	+183	+361.4
-15.6	+4	+39.2	+9.4	+49	+120.2	+34.4	+94	+201.2	+59.4	+139	+282.2	+84.4	+184	+363.2

FOR INTERPOLATION IN THE ABOVE TABLE USE:

BASE TEMPERATURE (°F or °C):

DEGREES CENTIGRADE:

DEGREES FAHRENHEIT:

1	2	3	4	5	6	7	8	9	10
0.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.56
1.8	3.6	5.4	7.2	9.0	10.8	12.6	14.4	16.2	18.0

The standard ARI rating condition (54/44°F and 95°F) and IPLV are ARI certified. All other ratings, including the following, are outside the scope of the certification program and are excluded:

- Glycol.
- 50 Hz.
- Unit sizes RTAC 200-500.



Water Chiller Systems Business Unit



Trane
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www.trane.com

For more information contact your local district office or e-mail us at comfort@trane.com

Literature Order Number	RLC-PRC006-EN
File Number	PL-RF-RLC-000-PRC006-0802
Supersedes	RLC-PRC006-EN 1001
Stocking Location	La Crosse

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